Acer AL1921

Service Guide

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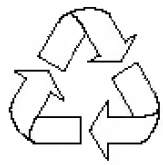

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Conventions

The following conventions are used in this manual:

Screen messages	Denotes actual messages that appear on screen.
NOTE	Gives bits and pieces of additional information related to the current topic.
WARNING	Alerts you to any damage that might result from doing or not doing specific actions.
CAUTION	Gives precautionary measures to avoid possible hardware or software problems.
IMPORTANT	Reminds you to do specific actions relevant to the accomplishment of procedures.

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Preface

Before using this information and the product it supports, please read the following general information.

1. This Service Guide provides you with all technical information relating to the BASIC CONFIGURATION decided for Acer's "global" product offering. To better fit local market requirements and enhance product competitiveness, your regional office MAY have decided to extend the functionality of a machine (e.g.add-on card, modem, or extra memory capability). These LOCALIZED FEATURES will NOT be covered in this generic service guide. In such cases, please contact your regional offices or the responsible personnel/channel to provide you with further technical details.

2. Please note WHEN ORDERING FRU PARTS, that you should check the most up-to-date information available on your regional web or channel. If, for whatever reason, a part number change is made, it will not be noted in the printed Service Guide. For ACER-AUTHORIZED SERVICE PROVIDERS, your Acer office may have a DIFFERENT part number code to those given in the FRU list of this printed Service Guide. You MUST use the list provided by your regional Acer office to order FRU parts for repair and service of customer machines.

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Warning: (For FCC Certified Models)

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

1. Reorient or relocate the receiving antenna.
2. Increase the separation between the equipment and receiver.
3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
4. Consult the dealer or an experienced radio/TV technician for help.

Notice:

1. The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
2. Shielded interface cables and AC power cord, if any, must be used in order to comply with the emission limits.
3. The manufacturer is not responsible for any radio or TV interference caused by unauthorized modification to this equipment. It is the responsibility of the user to correct such interference.

As an ENERGY STAR® Partner our company has determined that this product meets the ENERGY STAR® guidelines for energy efficiency.

Warning:

To prevent fire or shock hazard, do not expose the monitor to rain or moisture. Dangerously high voltages are present inside the monitor. Do not open the cabinet. Refer servicing to qualified personnel only.

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Precautions

- Do not use the monitor near water, e.g. near a bathtub, washbowl, kitchen sink, laundry tub, swimming pool or in a wet basement.
- Do not place the monitor on an unstable trolley, stand, or table. If the monitor falls, it can injure a person and cause serious damage to the appliance. Use only a trolley or stand recommended by the manufacturer or sold with the monitor. If you mount the monitor on a wall or shelf, use a mounting kit approved by the manufacturer and follow the kit instructions.
- Slots and openings in the back and bottom of the cabinet are provided for ventilation. To ensure reliable operation of the monitor and to protect it from overheating, be sure these openings are not blocked or covered. Do not place the monitor on a bed, sofa, rug, or similar surface. Do not place the monitor near or over a radiator or heat register. Do not place the monitor in a bookcase or cabinet unless proper ventilation is provided.
- The monitor should be operated only from the type of power source indicated on the label. If you are not sure of the type of power supplied to your home, consult your dealer or local power company.
- The monitor is equipped with a three-pronged grounded plug, a plug with a third (grounding) pin. This plug will fit only into a grounded power outlet as a safety feature. If your outlet does not accommodate the three-wire plug, have an electrician install the correct outlet, or use an adapter to ground the appliance safely. Do not defeat the safety purpose of the grounded plug.
- Unplug the unit during a lightning storm or when it will not be used for long periods of time. This will protect the monitor from damage due to power surges.
- Do not overload power strips and extension cords. Overloading can result in fire or electric shock.
- Never push any object into the slot on the monitor cabinet. It could short circuit parts causing a fire or electric shock. Never spill liquids on the monitor.
- Do not attempt to service the monitor yourself; opening or removing covers can expose you to dangerous voltages and other hazards. Please refer all servicing to qualified service personnel
- To ensure satisfactory operation, use the monitor only with UL listed computers which have appropriate configured receptacles marked between 100 - 240V AC, Min. 3.5A.
- The wall socket shall be installed near the equipment and shall be easily accessible.

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Special Notes On LCD Monitors

The following symptoms are normal with LCD monitor and do not indicate a problem.

Notes

- Due to the nature of the fluorescent light, the screen may flicker during initial use. Turn off the Power Switch and then turn it on again to make sure the flicker disappears.
- You may find slightly uneven brightness on the screen depending on the desktop pattern you use.
- The LCD screen has effective pixels of 99.99% or more. It may include blemishes of 0.01% or less such as a missing pixel or a pixel lit all of the time.
- Due to the nature of the LCD screen, an afterimage of the previous screen may remain after switching the image, when the same image is displayed for hours. In this case, the screen is recovered slowly by changing the image or turning off the Power Switch for hours.

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Monitor Features

		AU EN02	SEC E1-L01
LCD Panel	Driving system	TFT Color LCD	TFT Color LCD
	Size	48cm(19.0")	48cm(19.0")
	Pixel pitch	0.294mm(H)x 0.294mm(V)	0.294mm(H)x 0.294mm(V)
	Brightness	250cd/m² (Typical)	250cd/m² (Typical)
	Contrast	700:1(Typical)	500:1(Typical)
	Viewable angle	170° (H) 170° (V)	170° (H) 170° (V)
	Response time	25ms(Tr+Tf),Tr=15ms,Tf=10ms	25 ms(Tr+Tf)Tr=15ms/Tf=10ms
Input	Video	R,G,B Analog Interface	
		Digital	Digital
	Separate Sync.	H/V TTL	H/V TTL
	H-Frequency	30KHz – 80KHz	30KHz – 80KHz
	V-Frequency	55-75Hz	55-75Hz
Display Colors		16.7M Colors	16.7M Colors
Dot Clock		165MHz	165MHz
Max. Resolution		1280 x 1024 @75Hz	1280 x 1024 @75Hz
Plug & Play		VESA DDC1/2B™	VESA DDC1/2B™
EPA ENERGY STAR®	ON Mode	≤60W	≤60W
	OFF Mode	≤5W	≤5W
Input Connector		D-Sub 15pin	D-Sub 15pin
		DVI-D 24pin	DVI-D 24pin
Input Video Signal		Analog:0.7Vp-p(standard), 75 OHM, Positive Digital:DVI-D	Analog:0.7Vp-p(standard), 75 OHM, Positive Digital:DVI-D
Display Size		Horizontal : 376.32mm	Horizontal : 376.32mm
		Vertical : 301.056mm	Vertical : 301.056mm
Power Source		100~240VAC,47~63HZ	100~240VAC,47~63HZ
Environmental Considerations		Operating Temp: 5° to 50°C Storage Temp.: -20° to 65°C Operating Humidity: 10% to 85%	Operating Temp: 5° to 50°C Storage Temp.: -20° to 65°C Operating Humidity: 10% to 85%
Dimensions		404.2(w)x330(H)x20(D)	404.2(w)x330(H)x20(D)
Weight (N. W.)		4.2kg	4.2kg

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External Controls:	Switch	• Auto Adjust Key • </Volume • >/ Volume • Power Button • MENU/ Exit	• Auto Adjust Key • </Volume • >/ Volume • Power Button • MENU/ Exit
	Functions	• Contrast • Brightness • Focus • Clock • H-Position • V-Position • Input Selected • Language • (Warm) Color • (Cool)Color • RGB Color temperature • Reset • OSD timeout • information • Exit	• Contrast • Brightness • Focus • Clock • H-Position • V-Position • Input Selected • Language • (Warm) Color • (Cool)Color • RGB Color temperature • Reset • OSD timeout • information • Exit
Power Consumption (Maximum)		60	60 Watts
Audio Output		Rated Power 2.5W rms (Per channel)	Rated Power 2.5W rms (Per channel)
Regulatory Compliance		CSA, TÜV/GS, CE, TCO'99, UL	CSA, TÜV/GS, CE, TCO'99, UL

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Electrical Requirements

Standard Test Conditions
All tests shall be performed under the following conditions, unless otherwise specified.
Ambient light : 225 lux
Viewing distance : 40 cm in front of LCD panel
Warm up time
All specifications : 30 minutes
Fully functional : 5 seconds
Measuring equipment : Chroma 7120 signal generator or equivalent, directly Connected to the monitor under test.
Control settings
User brightness control : Maximum (unless otherwise specified)
User contrast control: Typical (unless otherwise specified)
User red/white balance,
Green/white balance and
Blue/white balance control : In the center (unless otherwise specified)
Power input: 90Vac or 240Vac

Ambient temperature: 20 ± 5 °C

Analog input mode: 1280 x1024 /75 Hz

Measurement systems
The units of measure stated in this document are listed below:
1 gamma = 1 nano tesla
1 tesla = 10,000 gauss
cm = in x 2.54
lb = kg x 2.2
degrees F = [°C x 1.8] + 32
degrees C = [°F - 32]/1.8
u' = 4x/(-2x + 12y + 3)
v' = 9y/(-2x + 12y + 3)
x = (27u'/4)/[(9u'/2) - 12v' + 9]
y = (3v')/[(9u'/2) - 12v' + 9]
nits = cd/(m2) = Ft-L x 3.426
lux = foot-candle x 10.76

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LCD Monitor General Specification

Panel type: 19 " active matrix color TFT LCD
1). AU EN02

Display size: 376.32mm (H) × 301.056mm(V)

Display mode:

VGA 640 × 480 (60//72/75 Hz)

SVGA 800 × 600 (56/60/72/75 Hz)

XGA 1024 × 768 (60/70/75 Hz)

SXGA 1280 × 1024 (60//75 Hz) standard resolution

Pixel pitch: 0.294mm(H) × 0.294mm(V)

Display dot: 1280 x (RGB) × 1024

Pixel clock: 25.2 – 135.0MHz

Contrast ratio: θ **= 0°** AU EN02 700:1

Brightness: AU EN02 250 **cd/㎡**
Response time (Tr/Tf): AU EN02 (25ms)
Display color: 16.7M(RGB 8 bit Data)

Viewing angle: AU EN02 L / R ≧85/ ≧ 85 (≧ 160 degrees horizontal typical)

U / D ≧ 75 / ≧ 75(≧ 140 degrees vertical typical)

Luminance uniformity: > 80 % (typical)
Pc interface: 1).Video: RGB analog 0.7V peak to peak
Sync: TTL positive or negative
Signal connector: 15 pin Mini D type, (standard VGA video)
3.5 mm stereo audio jack (Audio) (For AR577 only)
Audio power: 1.5Wrms + 0.5Wrms (300Hz – 1.3kHz)
Front control: power on/off with LED select adjustment
Interface frequency
Horizontal Frequency 30KHz --80KHz
Vertical Frequency 55Hz ------75Hz
Plug & play: Support VESA DDC2B functions

Power Input voltage: Single phase, 50/60HZ, 100 VAC to 240VAC ±10%

Total output power: 60 Watt max.

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LCD Panel Specification

LCD Panel Model (SEC E1-L01)

Display Type	active matrix color TFT LCD
Resolution	1280x1024 pixels
Display Dot	1280x (RGB) x 1024
Display Area	376.32mm(H) x 301.056mm(V)
Pixel Pitch	0.294mm(H) x 0.294mm(V)
Display Color	16.7M (true)
Lamp Frequency	80kHz
Lamp Current	7.0 mArms (typ)
Weight	2750g (typ)

Optical Specifications

I_L = 6 5mArms T_a = 25 ± 2°C V_{DD} = 5V F_V = 60Hz F_{DCLK} = 54MHz

ITEM		Symbol	Condition	MIN	TYP	MAX	UNIT
Contrast Ratio (Center of screen)		CR	θ=0, φ=0 Normal Viewing Angle	400	500	-	
Response Time at Ta	Rising	T_R		-	15	20-	msec
	Falling	T_F		-	10	15	
Luminance of white (Center of screen)		Y_L		220	250	-	cd/mm
Color Chromaticity (CIE)	Red	R_X		TYP -0 03	0 634	TYP +0 03	
		R_Y			0 354		
	Green	G_X			0 304		
		G_Y			0 581		
	Blue	B_X			0 143		
		B_Y			0 102		
	White	W_X			0 310		
		W_Y			0 330		
Viewing Angle	Hori	θ_L	CR≥10	-	80	-	Degrees
		θ_R		70	85	-	
	Vert	φ_H		70	85	-	
		φ_L		70	85	-	
Brightness Uniformity		B_{UNI}		70	85	80	%
Flicker		F		-	-	25	%
Luminance Uniformity(TCO99)		L_R		-	-	1 7	

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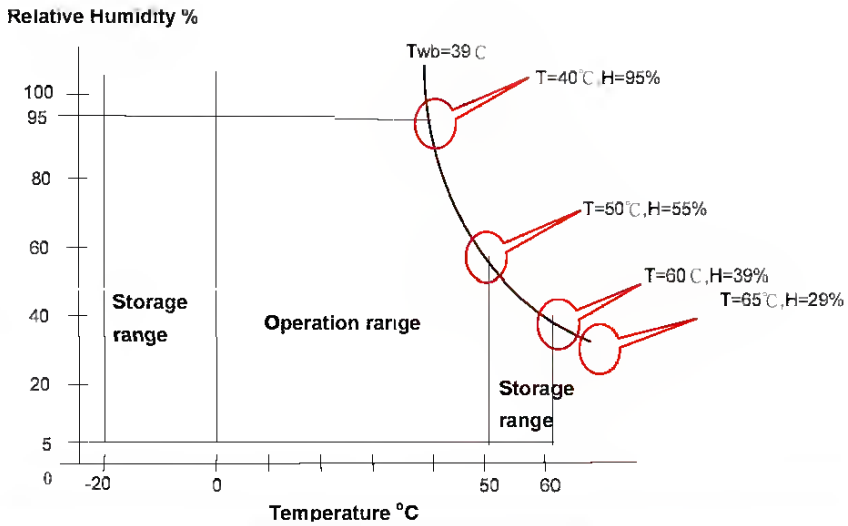
Panel Relative Humidity



Input Signals

Video input

Type	Analog R, G, B.
Input Impedance	75 ohm +/- 2%
Polarity Positive	
Amplitude	0 - 0.7 +/- 0.05 Vp
Display Color	same as LCD panel

Sync input

Signal	separate horizontal and vertical sync, or composite sync which are TTL compatible
Polarity	positive and negative.

Interface frequency

The following frequency range is generalized by supported timing. If the entered mode does not match the supported timing the display optimization will not be assured.

Horizontal Frequency	30KHz --83KHz
Vertical Frequency	55Hz -----75Hz

Panel bright dot defect and dark dot defect

Test conditions:

1280*1024,64KHz/60Hz

R.G.B.Full White and Full Black Pattern RECALL

1. Bright Dots: R.G or B dots ≤3dots (G dots ≤3dots)
2. Adjacent dot≤1 groupTotal bright dots ≤ 3dots
3. Dark Dots: -R.G or B dots ≤5dots - 2 adjacent dot≤2 group Total dark dots ≤5dots
4. Total(Dark & Bright) ≤7dots

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Supported Timing

TIMING	FH(KHZ)/ FV(HZ)	SYNC POLARITY	TOTAL (DOT/LINE)	ACTIVE (DOT/LINE)	SYNC WIDTH (DOT/LINE)	FRONT PORCH (DOT/LINE)	BACK PORCH (DOT/LINE)	PIXEL FOREQ (MHZ)
640x350 /DOS	37 9/70	+	800	449	64	32	96	25 175
640x480 VGA	31 5/59 9	-	800	525	96	8	40	25 175
	37 9/72 8	-	800	520	40	16	120	31 5
	37 5/75	-	840	500	64	16	120	31 5
800x600 SVGA	35 2/56 3	+	1024	625	72	24	128	36 0
	37 9/60 3	+	1056	628	128	40	88	40 0
	48 1/72 2	+	1040	666	120	56	64	50 0
	46 9/75	+	1056	625	80	16	160	49 0
1024x768 XGA	48 4/60 0	-	1344	806	136	24	160	60 0
	56 5/70 1	-	1328	806	136	24	144	70 0
	60/75	+	1312	800	96	16	176	75 0
1280x1024 SXGA	63 98/60 02	+	1688	1066	112	48	248	108
	79 98/75 03	+	1688	1066	144	16	248	135

Factory Preset Timing Table

STANDARD	RESOLUTION	HORIZONTAL FREQUENCY (kHz)	VERTICAL FREQUENCY (Hz)
VGA	720 x 400	31 47	70 0
	640 × 480	31 47	60 0
	640 × 480	35 00	66 6
	640 × 480	37 50	75 0
	640 × 480	37 861	72 8
SVGA	800 × 600	35 156	56 3
	800 × 600	37 879	60 0
	800 × 600	48 077	72 2
	800 × 600	46 875	75 0
	832 x 624	49 725	75 0
XGA	1024 × 768	48 363	60 0
	1024 × 768	56 476	70 0
	1024 x 768	60 24	74 9
	1024 × 768	60 02	75 0

Note: the IBM modes and Mac modes not in table, please refer to the spec!

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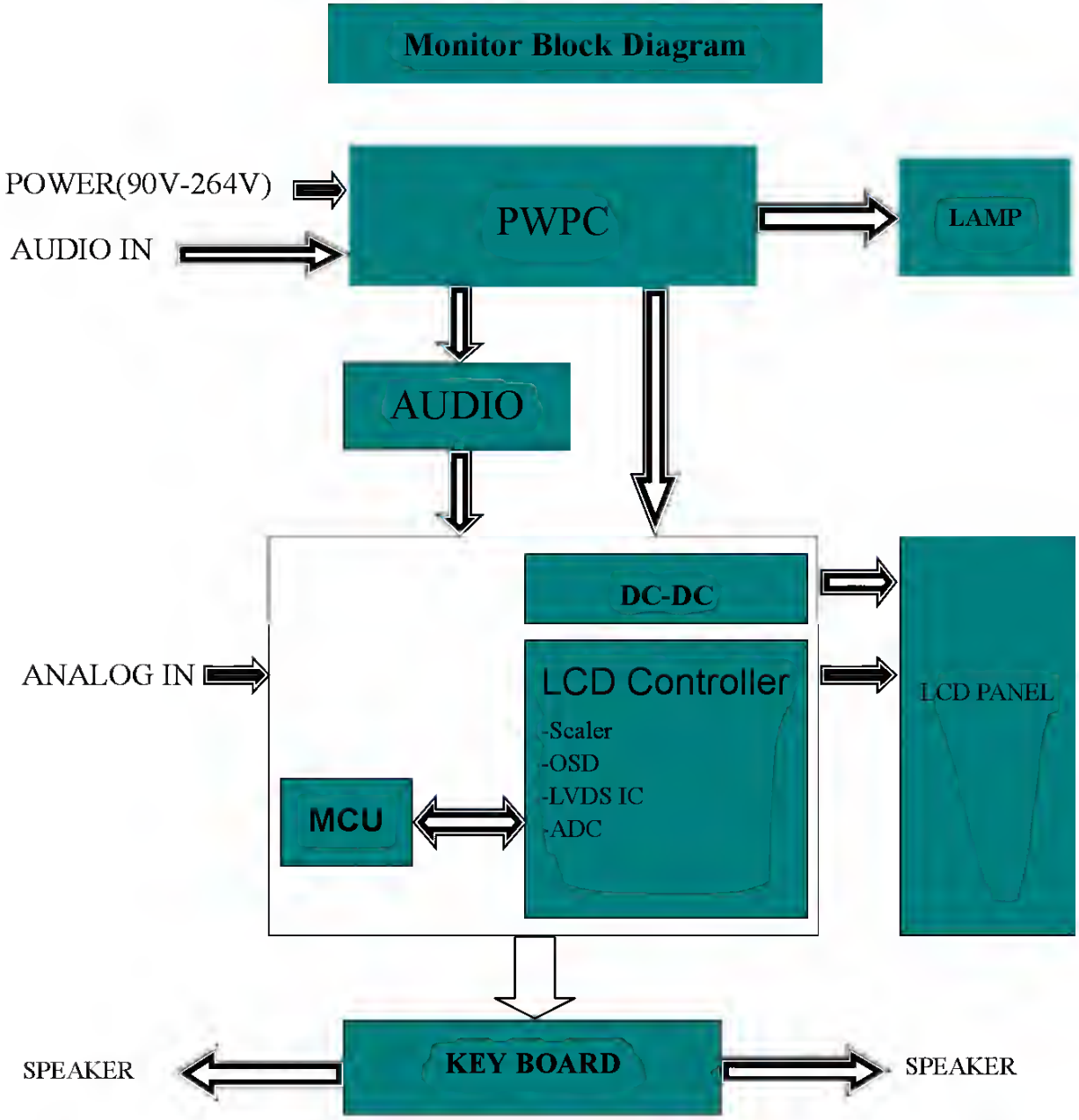
Monitor Block Diagram

The LCD MONITOR will contain an main board, an inverter/power board, keypad board and internal adapter which house the flat panel control logic, brightness control logic and DDC.
The Inverter board will drive the backlight of panel and the DC-DC conversion.
The Adapter will provides the 12V DC-power to inverter/power board



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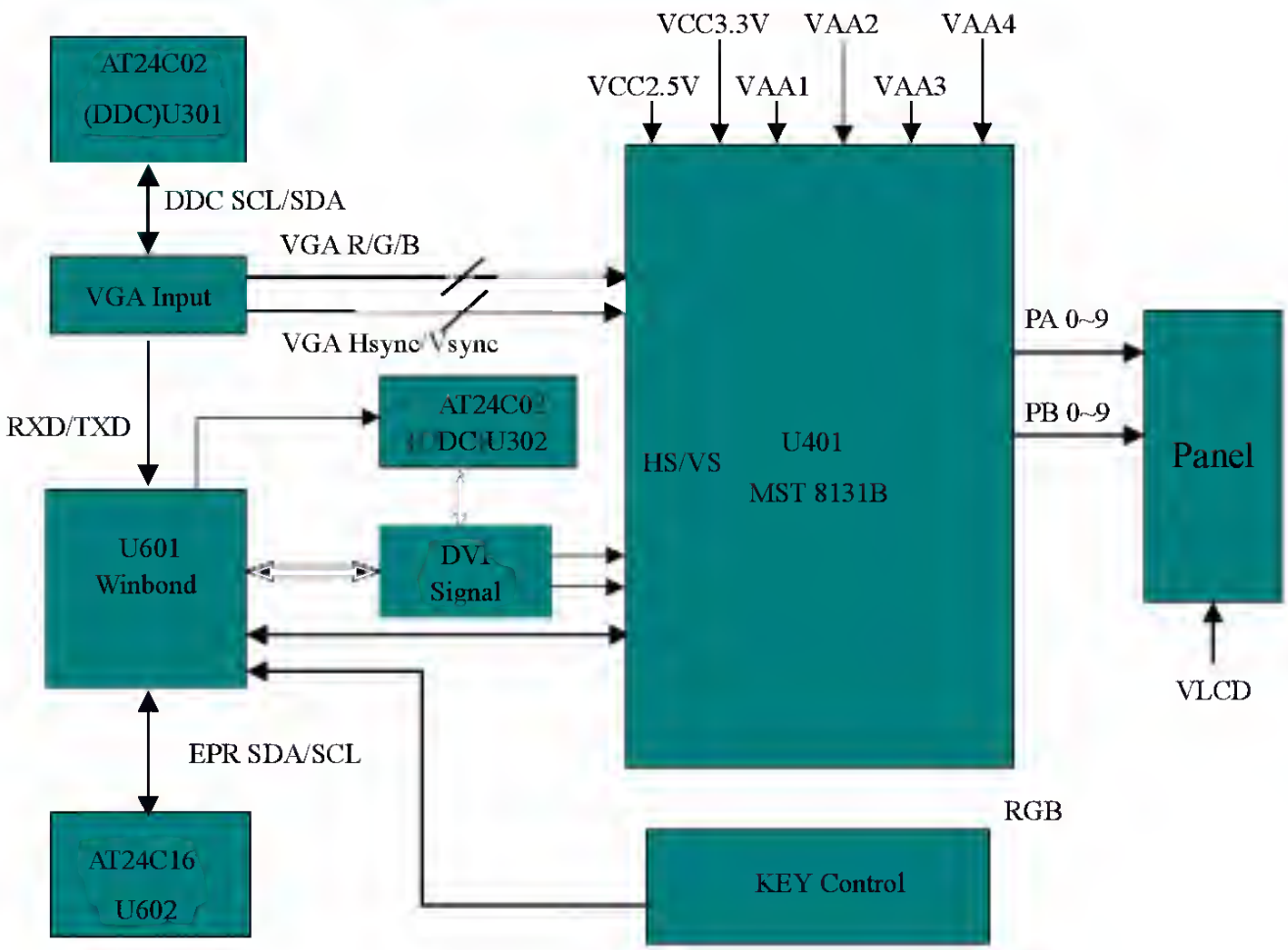
MAIN BOARD DIAGRAM



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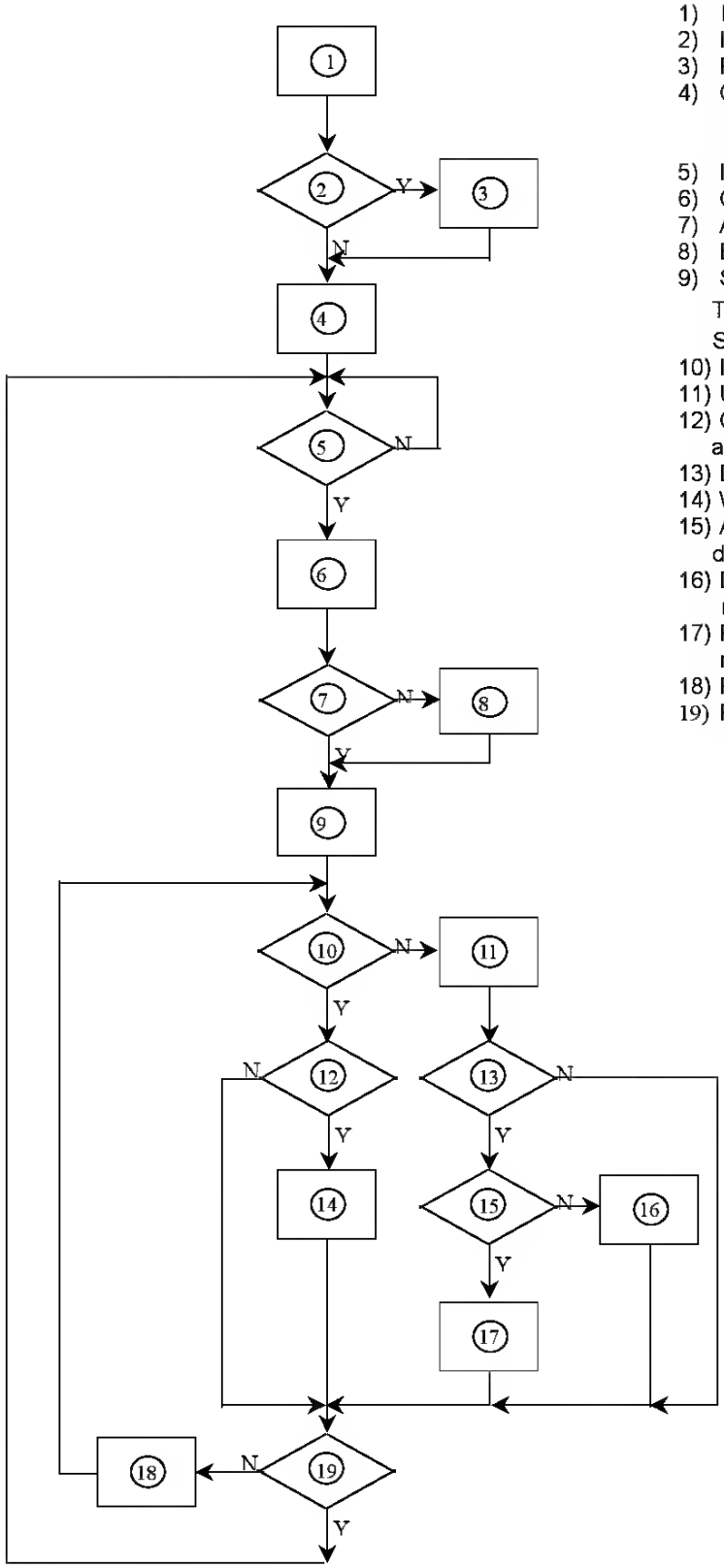
Software Flow Chart



1) MCU initialize
2) Is the eeprom blank?
3) Program the eeprom by default values
4) Get the PWM value of brightness from eeprom. Check the pin PANEL1 and PANEL2 to tell which panel to get with it.
5) Is the power key pressed?
6) Clear all global flags.
7) Are the AUTO and SELECT keys pressed?
8) Enter factory mode
9) Saving the power key status into eeprom.
   Turn on the LED and set it to green color
   Scalar initializes
10) In standby mode?
11) Update the lifetime of back light.
12) Check the analog and digital port, are there any signals coming?
13) Does the scalar send out a interrupt request?
14) Wake up the scalar
15) Are there any signals coming from analog or digital port?
16) Display " No Input Signal " message. And go into standby mode after the message disappear.
17) Program the scalar to be able to show the coming mode
18) Process the OSD display.
19) Read the keyboard. Is the power key pressed?

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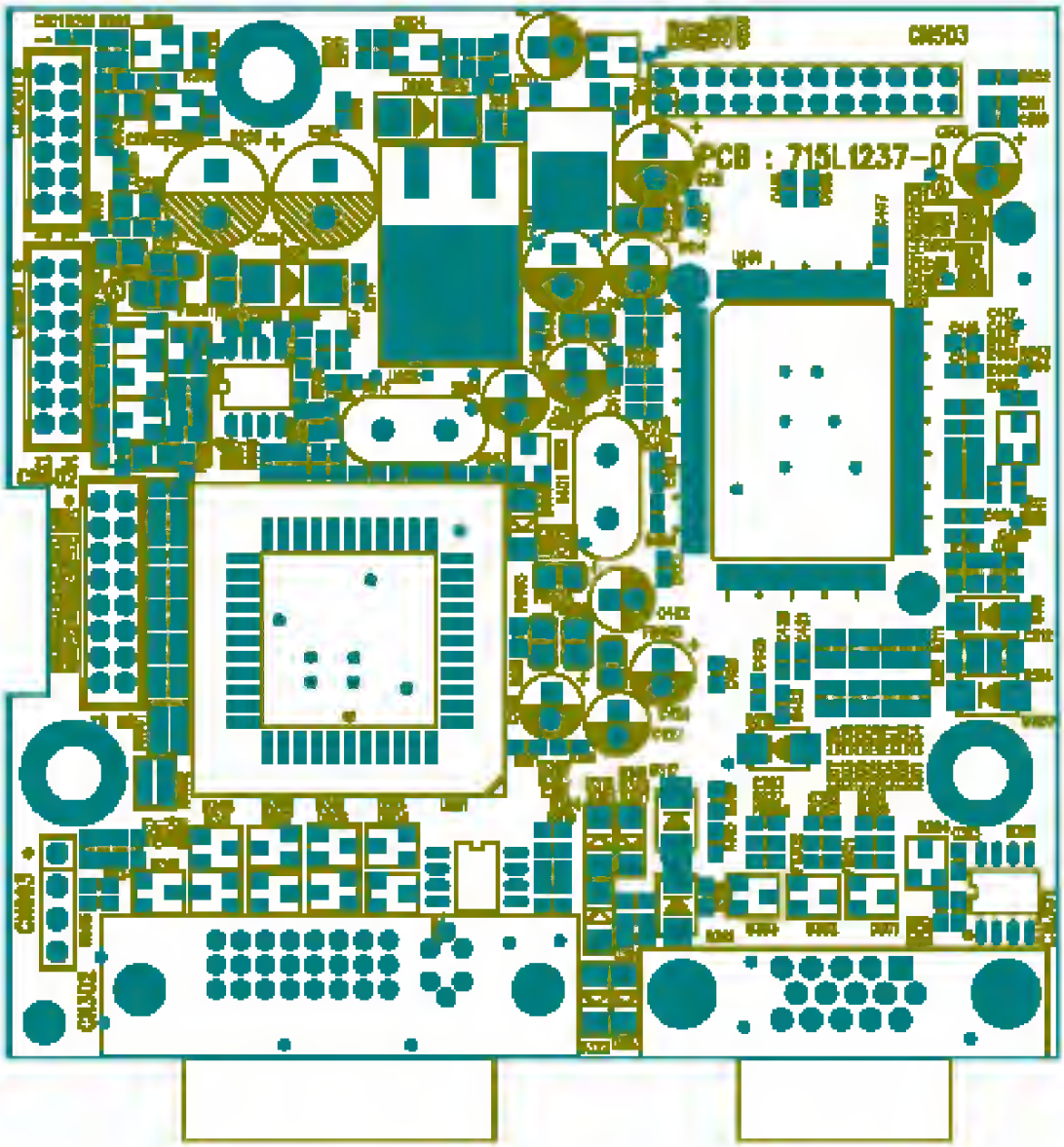
Monitor Board Layout



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Label	Component
U201	RT9164-25CL
U202	AIC1084-33CM
U301	M24C02-WMN6T SMT
U302	M24C02-WMN6T SMT
U401	MST8131B PQFP-12
U602	AT24C16N-10SC-2.7
U603	MAX810STR SOT-23
U601	W78E65P-40
X401	CRYSTAL 14.318MHzHC-49US
X601	20MHZ
CN201	WAFER 2*6P 2.0MM R/A
CN601	PIN HEADER 2*7P 2.0mm
CN602	WAFER 16PIN 2.0mm DIP
CN503	PIN HEADER 24P 2.0mm
CN301	88L 35315F HS
CN302	DVID CONN 24P

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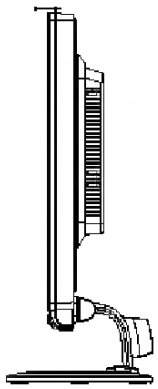
Mechanical Specification

The step between front bezel and back cover shall be within specification.

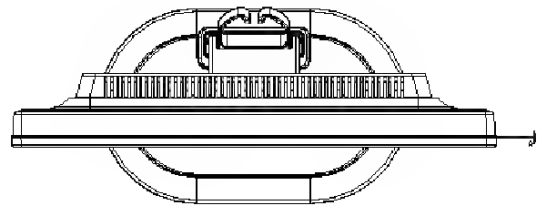
Top and Bottom
Back cover & Bezel concavity

0.8mm ≤ A ≤ 1.3 mm



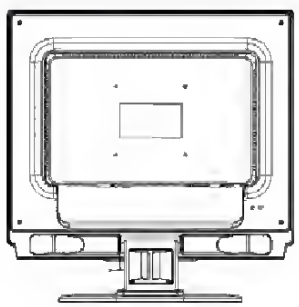
Left and Right
Back cover & Bezel concavity

0.8mm ≤ A ≤ 1.3 mm



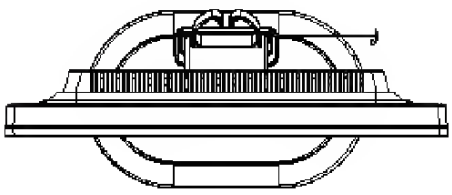
Back Cover & Hinge Cover concavity

0mm ≤ B ≤ 0.5mm



Base & Neck concavity

0mm ≤ C ≤ 0.6mm



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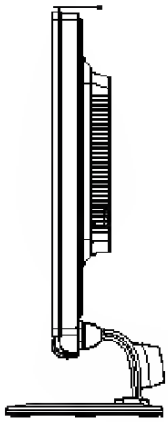
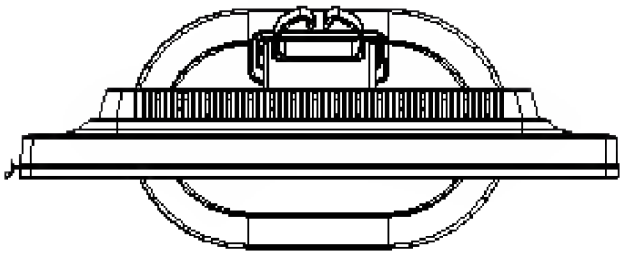
Top and Bottom
Back cover & Bezel step

0mm ≤ D ≤ 0.8 mm



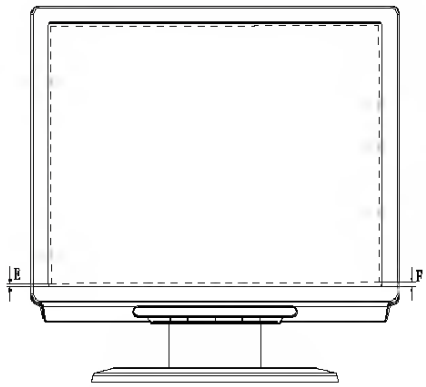
Left and Right
Back cover & Bezel step

0mm≤ D ≤ 0.8 mm

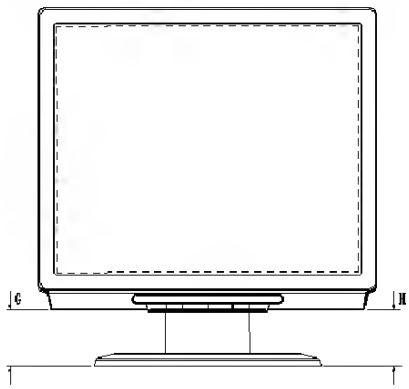


LCD Horizontally

The angle between front bezel and LCD unit in bottom side should not large than 1.0mm.



The distance of the LCD display unit from left side to right should not large than 4.0mm.



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Tilt Base Rotation

Tilt up 15 ± 2°/ down 5 ±2°

Plastic Material

For TCO99

Front Bezel ABS 94HB

Back Cover ABS 94HB

The Others ABS 94HB

For MPRII

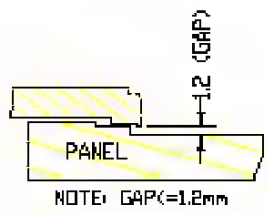
Front Bezel ABS 94HB

Back Cover ABS 94HB

The Others ABS 94HB

GAP Spec.

Gap between panel with bezel is 0 mm < gap < 1.2 mm



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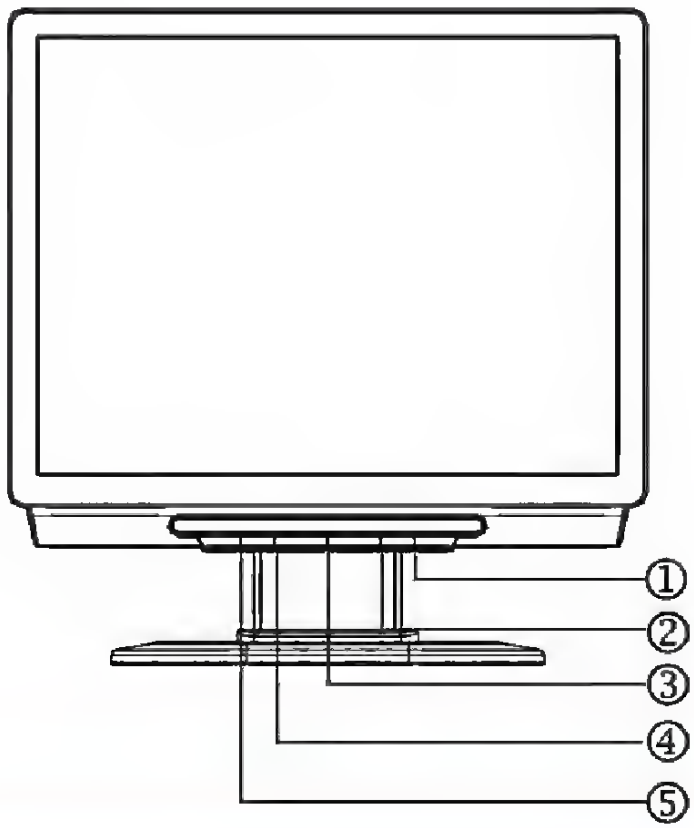
Front Bezel



Item	Description
1	VEDIO （UP）
2	VEDIO （DOWM）
3	POWER
4	MENU/ENTER
5	AUTO/EXIT

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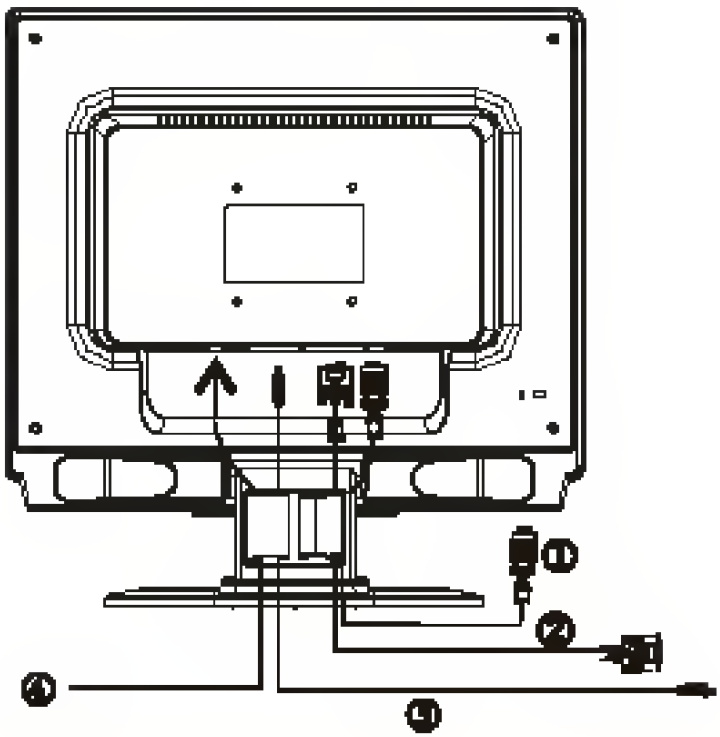
Rear Bezel



Item	Description
1	D-SUB Cable
2	DVI CABLE
3	AUDIO CABLE
4	AC POWER CORD

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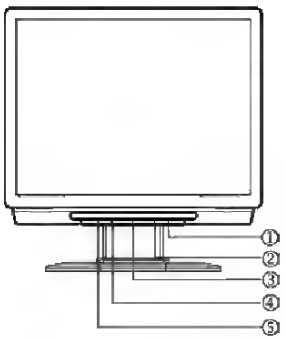
Operating Instructions

Press the power button to turn the monitor on or off. The other control buttons are located at front panel of the monitor. By changing these settings, the picture can be adjusted to your personal preferences.

- The power cord should be connected.
- Connect the video cable from the monitor to the video card.
- Press the power button to turn on the monitor position. The power indicator will light up.



External Control Button

External Controls

1	>/ Volume	4	MENU/ENTER
2	</ Volume	5	Auto Adjust Key/Exit
3	Power Key /LED		

Front Panel Control

- **Power Button:**
  Press this button to turn the monitor ON or OFF.

- **Menu / Enter :**
  Activate OSD menu when OSD is OFF or activate/de-activate adjustment function when OSD is ON or Exit OSD menu when in Volume Adjust OSD status.

- **<Volume:**
  Activates the volume control when the OSD is OFF or navigate through adjustment icons when OSD is ON or adjust a function when function is activated.

- **>/Volume:**
  Activates the volume control when the OSD is OFF or navigate through adjustment icons when OSD is ON or adjust a function when function is activated.

- **Auto Adjust button / Exit:**

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1. When OSD menu is in active status, this button will act as EXIT-KEY(EXIT OSD menu).
2. When OSD menu is in off status, press this button for 2 seconds to activate the Auto Adjustment function.
   The Auto Adjustment function is used to set the HPos, VPos, Clock and Focus.

- **Power Indicator:**
  Green — Power On mode.
  Orange — Off mode.

Notes

- Do not install the monitor in a location near heat sources such as radiators or air ducts, or in a place subject to direct sunlight, or excessive dust or mechanical vibration or shock.
- Save the original shipping carton and packing materials, as they will come in handy if you ever have to ship your monitor.
- For maximum protection, repackage your monitor as it was originally packed at the factory.
- To keep the monitor looking new, periodically clean it with a soft cloth. Stubborn stains may be removed with a cloth lightly dampened with a mild detergent solution. Never use strong solvents such as thinner, benzene, or abrasive cleaners, since these will damage the cabinet. As a safety precaution, always unplug the monitor before cleaning it.

1. Press the MENU-button to activate the OSD window. See figure 4.
2. Press <or >to select the desired function. See figure 4.
3. Press the MENU-button to select the function that you want to adjust.
4. Press < or >to change the settings of the current function.
5. To exit and save, select the exit function. If you want to adjust any other function, repeat steps 2-4.

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Adjusting The Picture

1.) Main OSD Menu :

a. Outline:

I. Analog-Only Model

II. Dual-Input Model, Analog Signal Input

III. Dual-Input Model, Digital Signal Input

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b. The Description For Control Function :

Main Menu Icon	Sub Menu Item	Sub Menu Icon	Description	Adjustment Range	Reset Value
	Contrast		Contrast from Digital-register	0-100	Recall Cool Contrast Value
	Brightness		Backlight Adjustment	0-100	Recall Cool Brightness Value
	Focus		Adjust Picture Phase to reduce Horizontal-Line noise	0-100	Do Auto Config
	Clock		Adjust picture Clock to reduce Vertical-Line noise	0-100	Do Auto Config
	H. Position		Adjust the horizontal position of the picture	0-100	Do Auto Config
	V. Position		Adjust the verticalposition of the picture	0-100	Do Auto Config
	Warm	N/A	Recall Warm Color Temperature from EEPROM	N/A	The Color Temperature will be set to Cool The User R/G/B value(default is 100) will not be Modified by Reset function
	Cool	N/A	Recall Cool Color Temperature from EEPROM	N/A	
	User / Red		Red Gain from Digital-register	0-100	
	User / Green		Green Gain Digital-register	0-100	
	User / Blue		Blue Gain from Digital-register	0-100	
	English	N/A	Set OSD display language to English	N/A	The Language will be set to English
	繁體中文	N/A	Set OSD display language to Tranditional Chinese	N/A	
	Deutsch	N/A	Set OSD display language to German	N/A	
	Français	N/A	Set OSD display language to French	N/A	
	Español	N/A	Set OSD display language to Spain	N/A	
	Italiano	N/A	Set OSD display language to Italian	N/A	
	简体中文	N/A	Set OSD display language to Simplified Chinese	N/A	
	日本語	N/A	Set OSD display language to Japanese	N/A	
	H. Position		Adjust the horizontal position of the OSD	0-100	50
	V. Position		Adjust the verticalposition of the OSD	0-100	50
	OSD Timeout		Adjust the OSD timeout	10-120	10

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(Analog-Only Model)	Auto Config	N/A	Auto Adjust the H/V Position, Focus and Clock of picture	N/A	N/A
(Dual-Input Model)	Analog	N/A	Select input signal from analog (D-Sub)	N/A	N/A
	Digital	N/A	Select input signal from digital (DVI)	N/A	N/A
	Information	N/A	Show the resolution, H/V frequency and input port of current iput timing	N/A	N/A
	Reset	N/A	Clear each old status of Auto-configuration and set the color temperature to Cool	N/A	N/A
	Exit	N/A	Exit OSD	N/A	N/A

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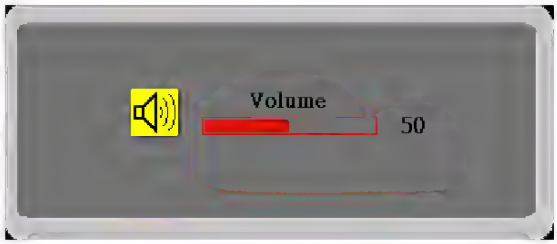
2.) Hot-Key Menu:

a. Outline:



b. The Description For Hot-Key Function :

Item	Operation	Icon	Description	Adjustment Range	Reset Value
Volume	When the OSD is closed, press Left or Right button will be Volume Hot-Key Function		Volume of Audio adjustment. The Audio will be Mute when volume=0	0-100	50

3.) OSD Message:

a. Outline:

b. The Description For OSD Message :

Item	Description
Auto Config Please Wait	1.) When Analog signal input, if User Press Hot-Key "Auto", will show this message, and the monitor do the auto config function 2.) When Digital signal input, without this OSD Message.
Input Not Supported	When the Hsync Frequency, Vsync Frequency or Resolution is out of the monitor support range, will show this message. This message will be flying.
Cable Not Connected	1.) Analog-Only Model : When the video cable is not connected, will show this message. This message will be flying. 2.) Dual-Input Model : Dual-Input Model without this OSD Message.
No Signal	1.) Analog-Only Model : When the video cable is connected, but there is no active signal input, will show this message, then enter power saving. 2.) Dual-Input Model : When the video cable is not connected, or the video cable is connected but there is no active signal input, will show this message, then enter power saving.

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4.) Logo:

When the monitor is power on, the LOGO will be showed in the center, and disappear slowly.

How To Optimize The DOS-Mode

Plug And Play

Plug & Play DDC1/2B Feature

This monitor is equipped with VESA DDC1/2B capabilities according to the VESA DDC STANDARD. It allows the monitor to inform the host system of its identity and, depending on the level of DDC used, communicate additional information about its display capabilities. The communication channel is defined in two levels, DDC1 and DDC2B.

The DDC1 is a unidirectional data channel from the display to the host that continuously transmits EDID information. The DDC2B is a bidirectional data channel based on the I²C protocol. The host can request EDID information over the DDC2B channel.

This monitor will appear to be non-functional if there is no video input signal. In order for this monitor to operate properly, there must be a video input signal.

This monitor meets the Green monitor standards as set by the Video Electronics Standards Association (VESA) and/or the United States Environmental Protection Agency (EPA) and The Swedish Confederation Employees (NUTEK). This feature is designed to conserve electrical energy by reducing power consumption when there is no video-input signal present. When there is no video input signal this monitor, following a time-out period, will automatically switch to an OFF mode. This reduces the monitor's internal power supply consumption. After the video input signal is restored, full power is restored and the display is automatically redrawn. The appearance is similar to a "Screen Saver" feature except the display is completely off. The display is restored by pressing a key on the keyboard, or clicking the mouse.

Using The Right Power Cord

The accessory power cord for the Northern American region is the wallet plug with NEMA 5-15 style and is UL listed and CSA labeled. The voltage rating for the power cord shall be 125 volts AC.

Supplied with units intended for connection to power outlet of personal computer: Please use a cord set consisting of a minimum No. 18 AWG, type SJT or SVT three conductors flexible cord. One end terminates with a grounding type attachment plug, rated 10A, 250V, CEE-22 male configuration. The other end terminates with a molded-on type connector body, rated 10A, 250V, having standard CEE-22 female configuration.

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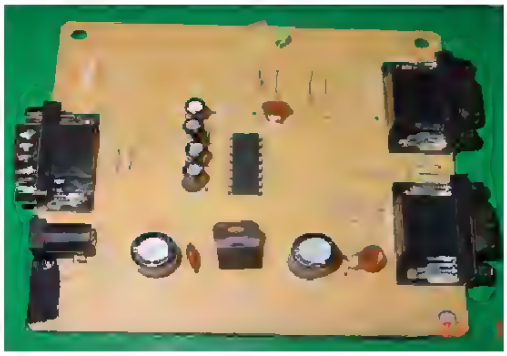
Please note that power supply cord needs to use VDE 0602, 0625, 0821 approval power cord in European counties.

Update the firmware

1.Tools:

a. ISP Kit (Prepared by CMO) picture 1
b. RS232 Comport Cable -- picture 2
c. D-sub Cable
d. Adapter

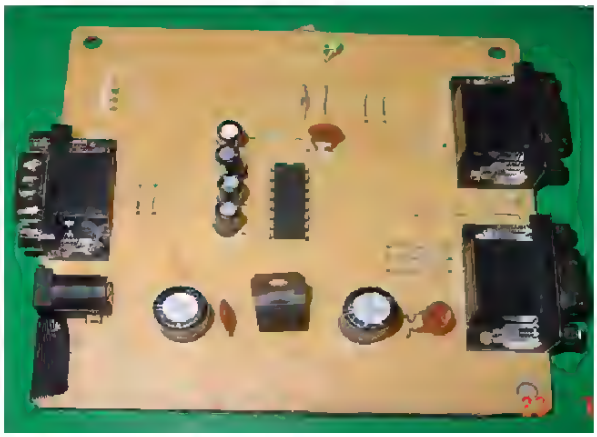


No.1 –kit

No.2-kit

2.Install kit as below:

Step1—Get a Kit



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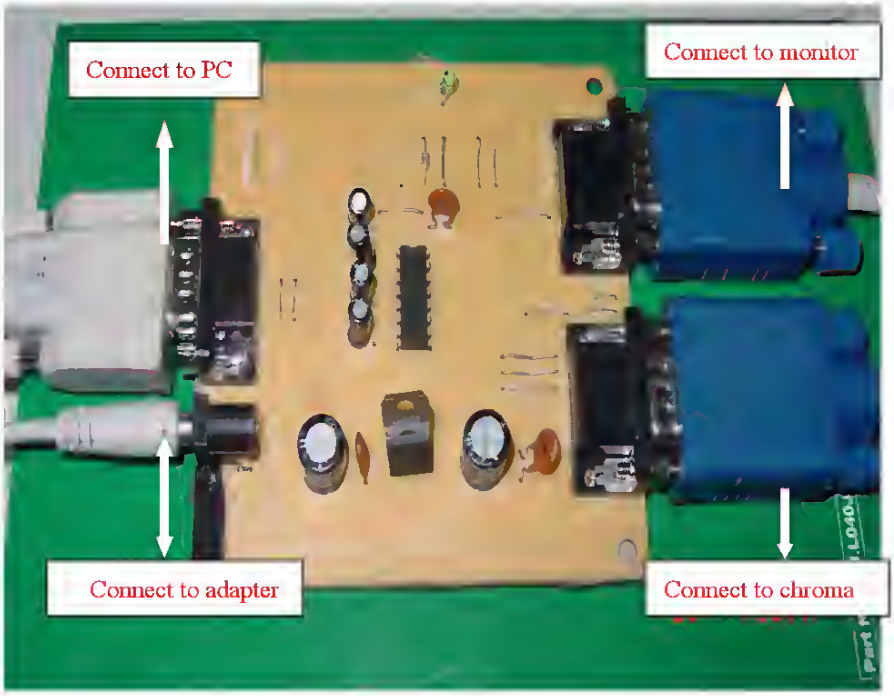
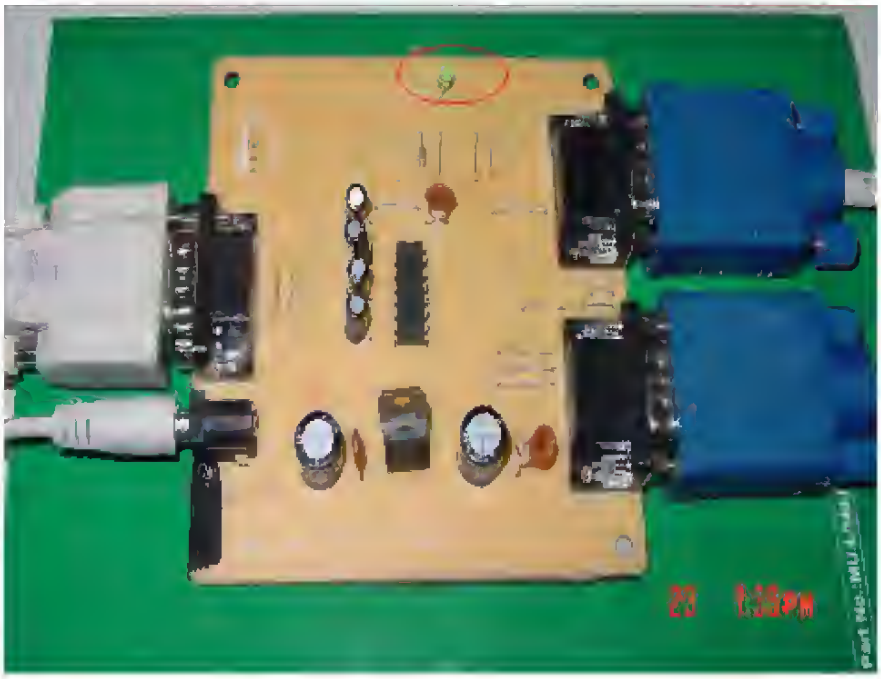
Step2---join RS232 Monitor cable,and Adapter



Step3—When the LED turns Green, It will start running



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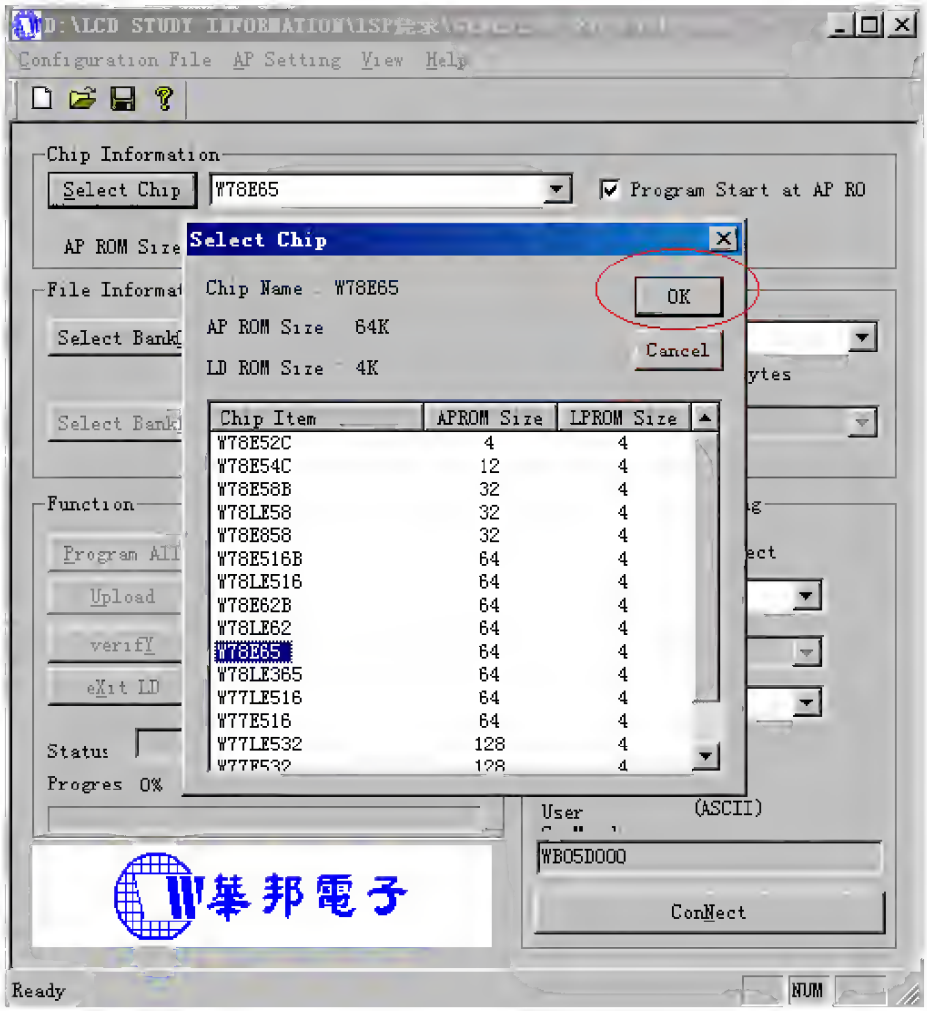
3.Program Runnig

Before update the firmware ,please power on the monitor, in this time,please push your finger to control the keyswitch(left:"< ", right"> ", insert and draw the DC power ,the interface will appear "ISP" mode.

Step1-Open the ISP tool. And Select the MCU type



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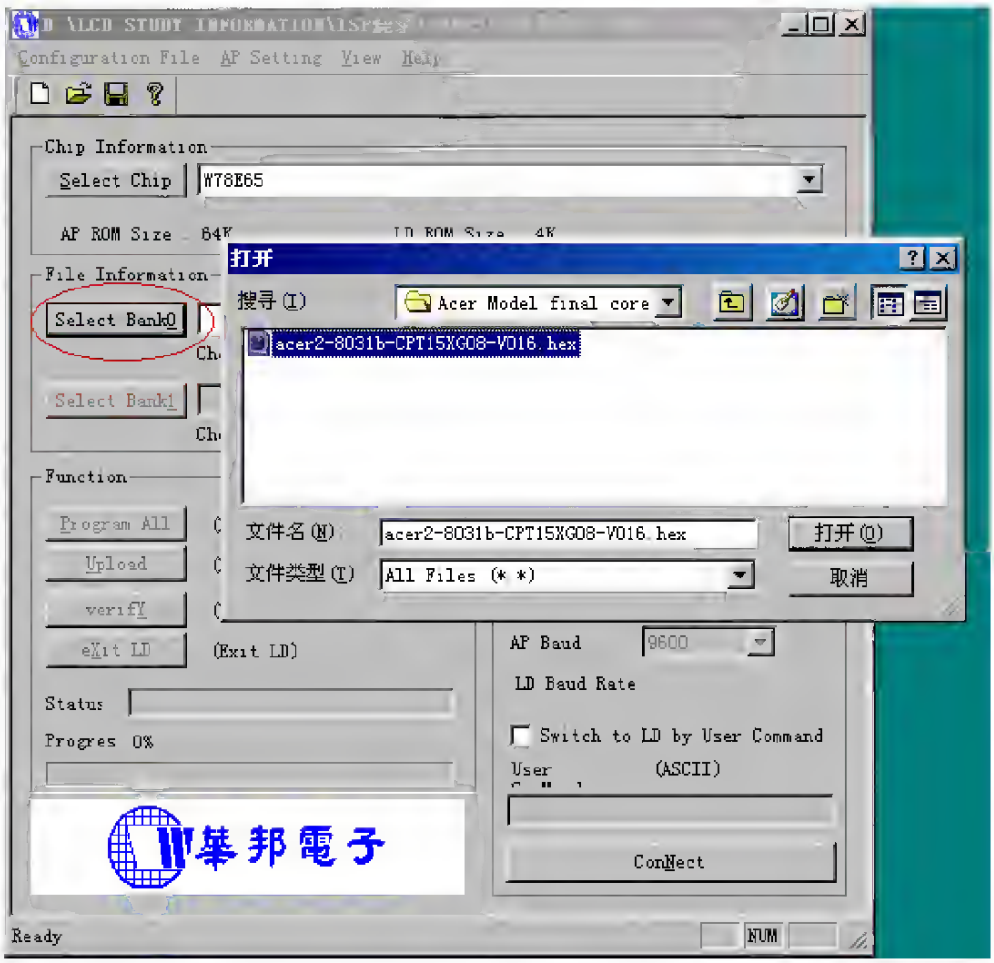
Step2—Select Bank

where is the new firmware ?



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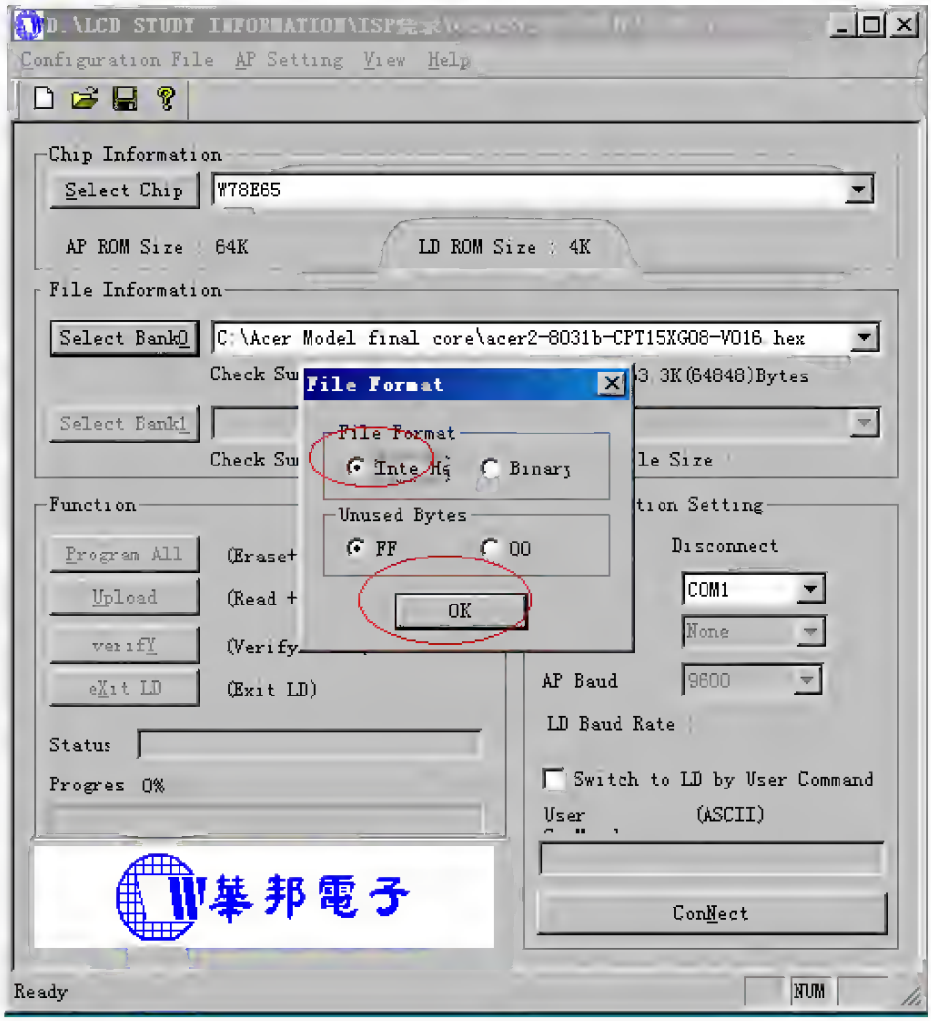
Step3—Choose the File Format

a: when you already choose the New firmware ,a small pane appear "File Format",please choose the "inte he", no "Binary ", and following choose the "OK"



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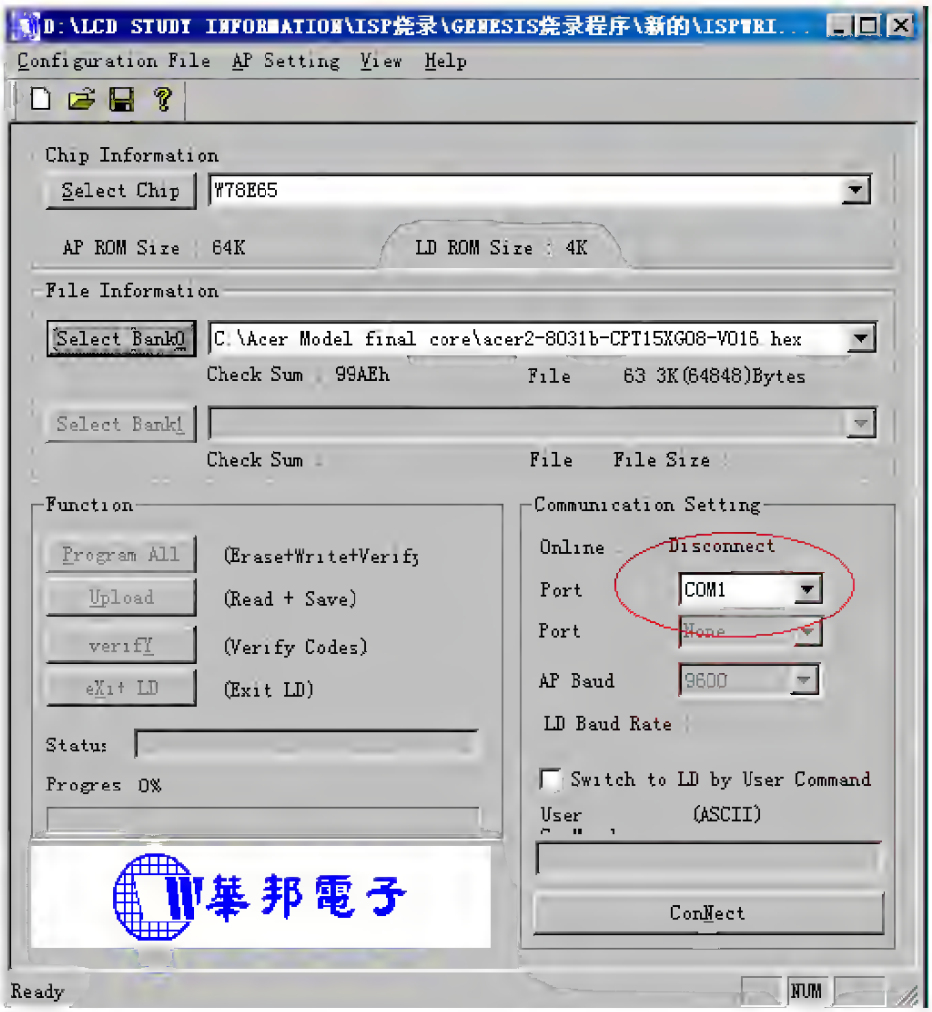
Step4-- Select the communication Setting: Port Name,the “Port ” the same your PC COM”



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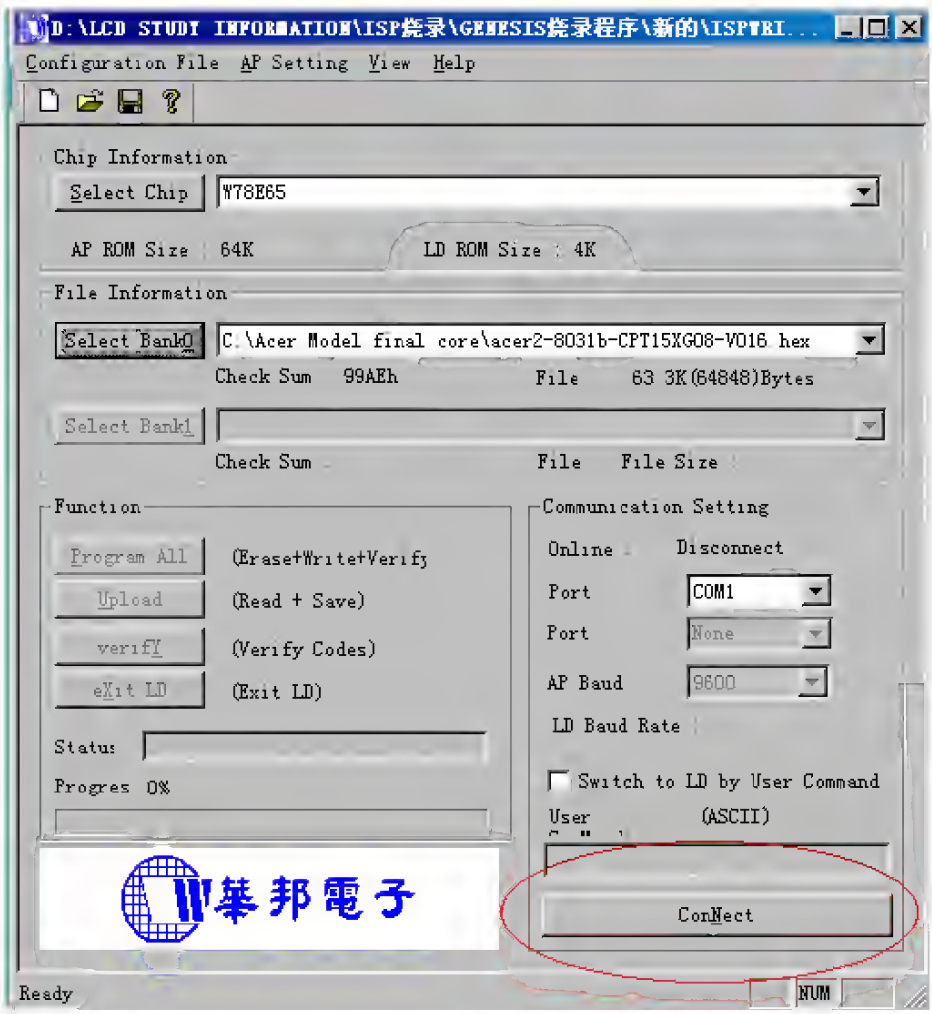
Step5-- Click the “ConNect” button.



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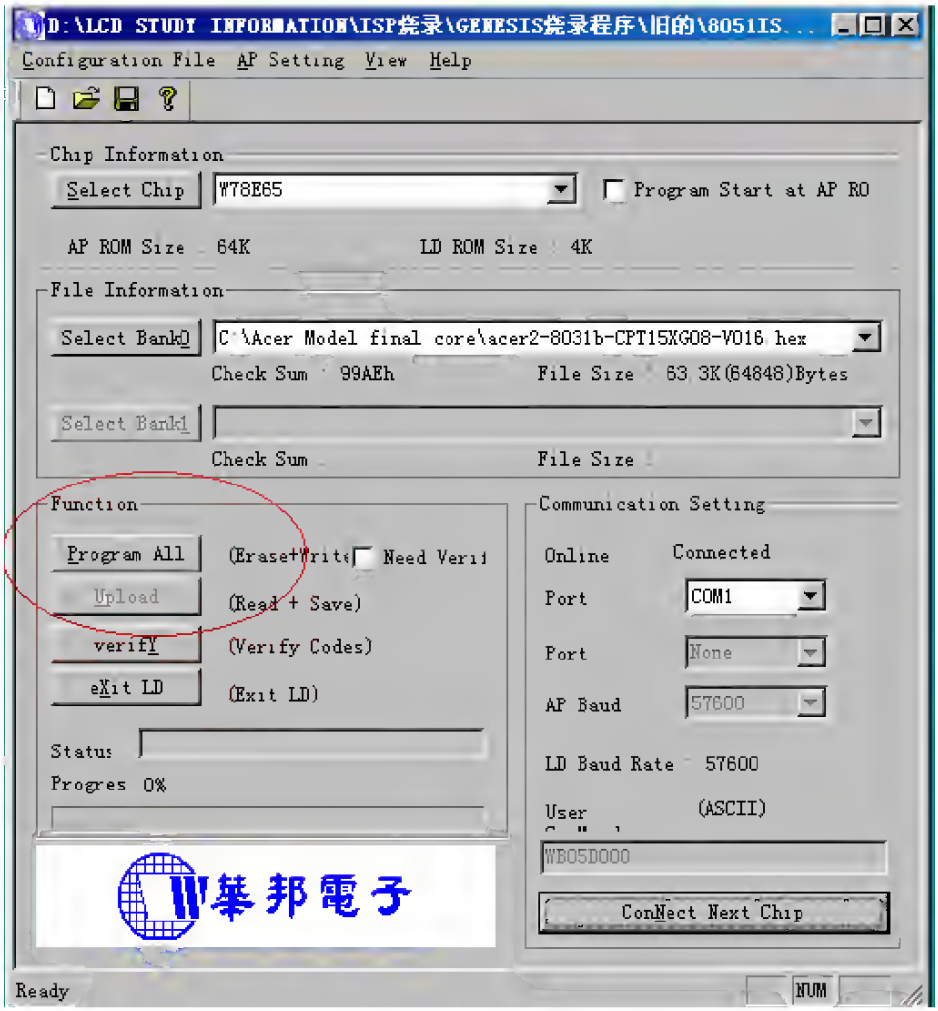
Step6-- Before Executing ISP,the interface change as below
Click “Program All” button that will execute erase and program



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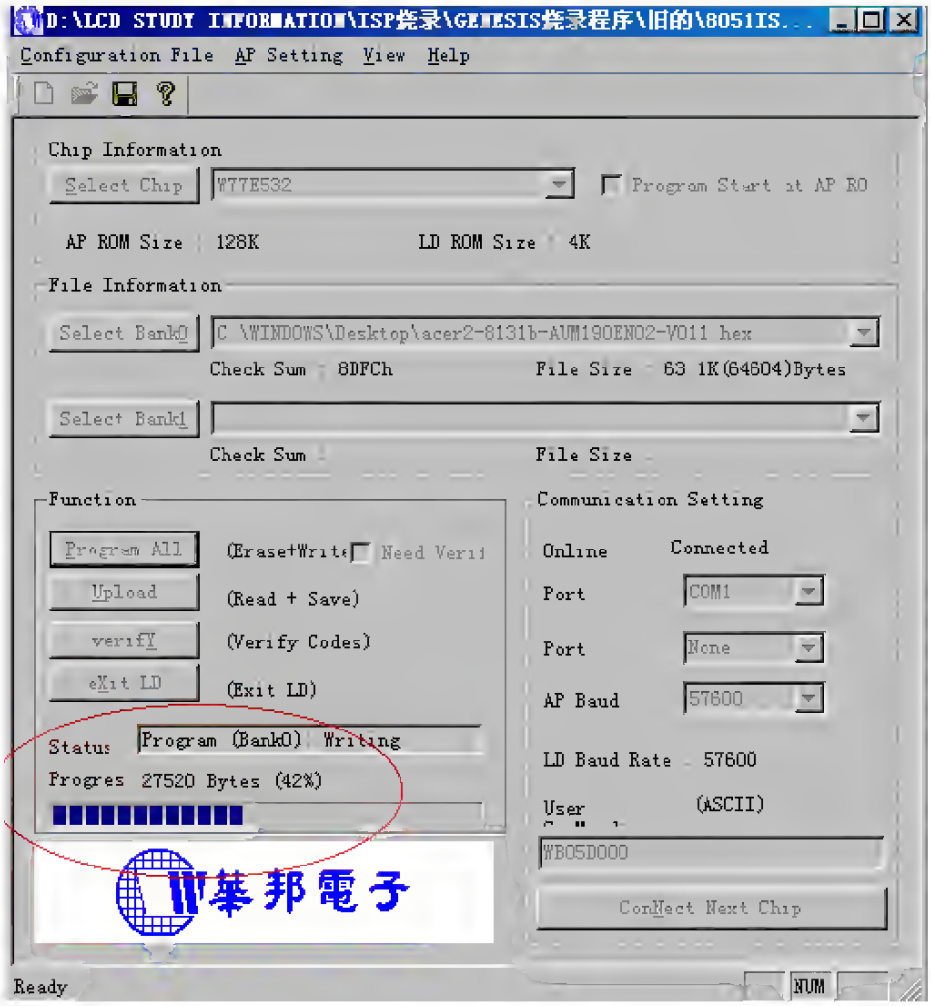
Step7—ISP is processing.



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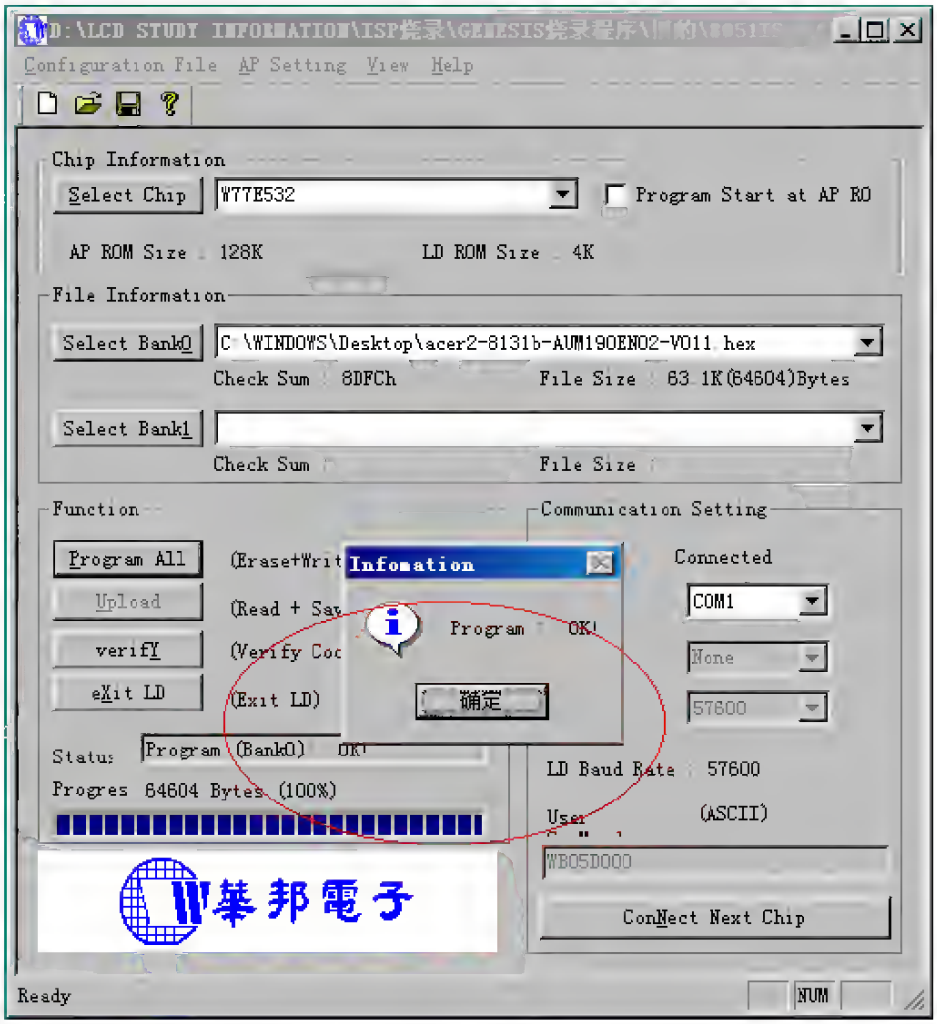
Step8-- Then you can get the window as follow, and Program ok.



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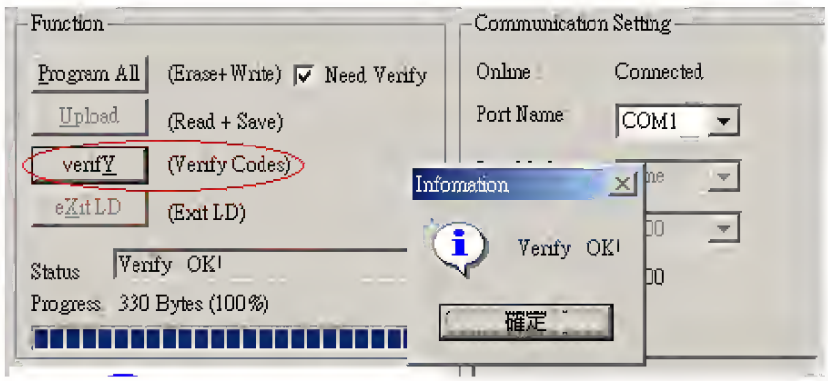
Step9--Click “verify” button that will execute verify action. Then you can get the window as follow, and click ok.After update the program of APROM, must remove the Reboot Mode condition.



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Chapter 3

Machine Disassembly

This chapter contains step-by-step procedures on how to assemble the monitor for maintenance.

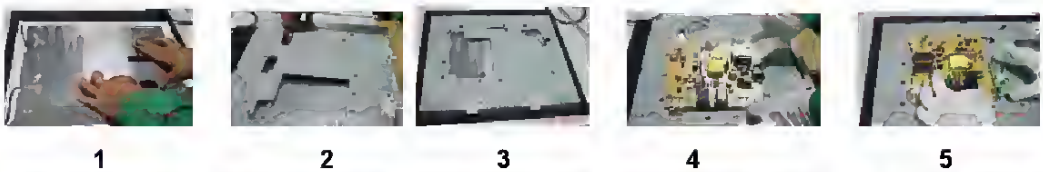
Disassembly Procedure

Disassemble the base

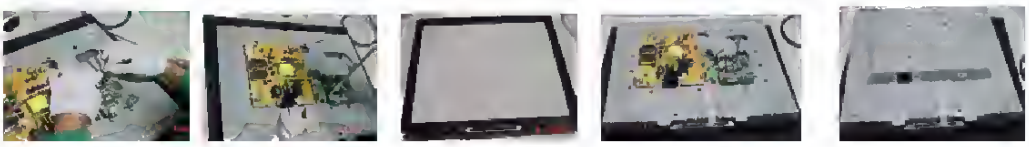
1. Remove the neck cover.
2. Remove the four screws to release the hinge.
3. Remove the base

Disassemble the chassis

1 To fix the LVD cable with the panel,and stick
2 To fix the main frame on the panel
3 give the panel to lock the Screws
4 To fix the power board on the main frame with screws
1 To fix the audio board together with power board
6 To connect the main board with audio board and LVD cable
7 To fix the main board with screws
8 To put the bezel on level place
9 To cover the panel with front bezel
10 To fix the shield on the main frame with screws
11 To put and fix the rear cover with screws
12 take the base together with interfaces
13 so the monitor was finishing!



1 2 3 4 5



6 7 8 9 10

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11 12 13

NOTE: 1.The screws for the different components vary in size. During the disassembly process, group the screws with the corresponding components to avoid mismatch when putting back the components.

2. Note: The monitor surface is susceptible to scratching!Therefore,lay the monitor on a soft surface when mounting or removing the base.

3.Wear gloves

Warning 1 In order to prevent the static disturbance,wear resisting static ring

2 No watch

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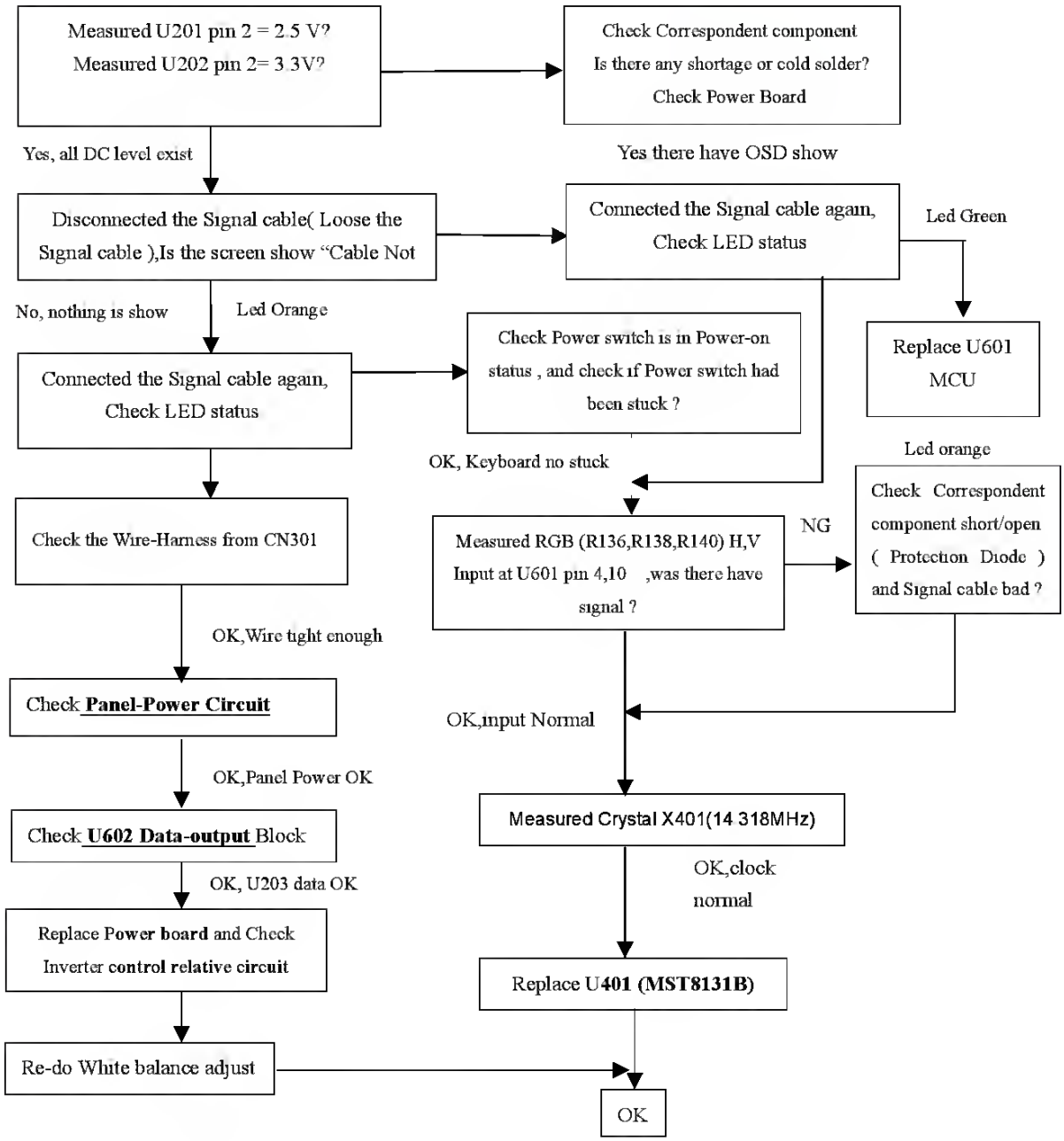
Troubleshooting

This chapter provides troubleshooting information for the AL1921:

Main Board

1. No Screen Appear


Measured U201 pin 2 = 2.5 V?
Measured U202 pin 2= 3.3V?
Check Correspondent component
Is there any shortage or cold solder?
Check Power Board
Yes, all DC level exist
Yes there have OSD show
Disconnected the Signal cable(Loose the Signal cable),Is the screen show "Cable Not
Connected the Signal cable again, Check LED status
Led Green
No, nothing is show
Led Orange
Connected the Signal cable again, Check LED status
Check Power switch is in Power-on status , and check if Power switch had been stuck ?
Replace U601 MCU
OK, Keyboard no stuck
Led orange
Check the Wire-Harness from CN301
Measured RGB (R136,R138,R140) H,V Input at U601 pin 4,10 ,was there have signal ?
NG
Check Correspondent component short/open (Protection Diode) and Signal cable bad ?
OK,Wire tight enough
Check Panel-Power Circuit
OK,input Normal
OK,Panel Power OK
Measured Crystal X401(14.318MHz)
Check U602 Data-output Block
OK,clock normal
OK, U203 data OK
Replace Power board and Check Inverter control relative circuit
Replace U401 (MST8131B)
Re-do White balance adjust
OK

Note:1.If Replace "**MAIN-BOARD**" ,Pleasere-do "**DDC-content**" programmed & "WHITE-Balance".
2. If Replace "Power Board" only, Please re-do " WHITE-Balance".

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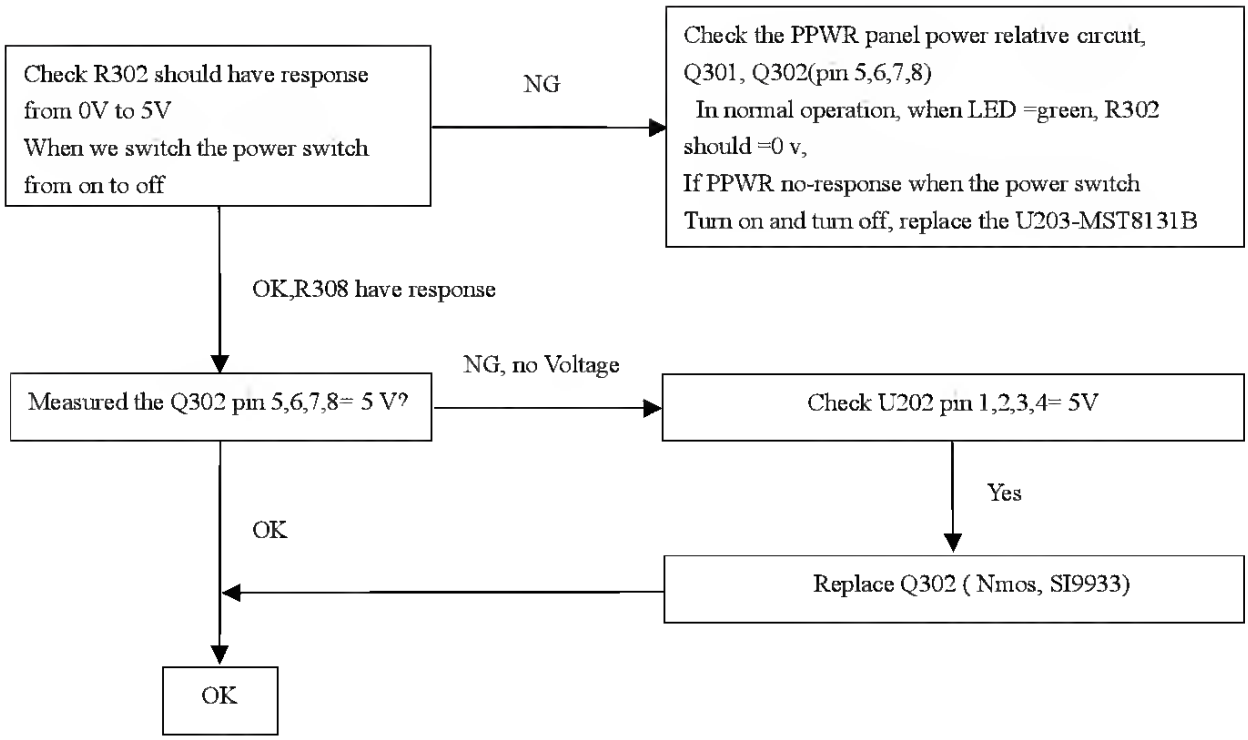
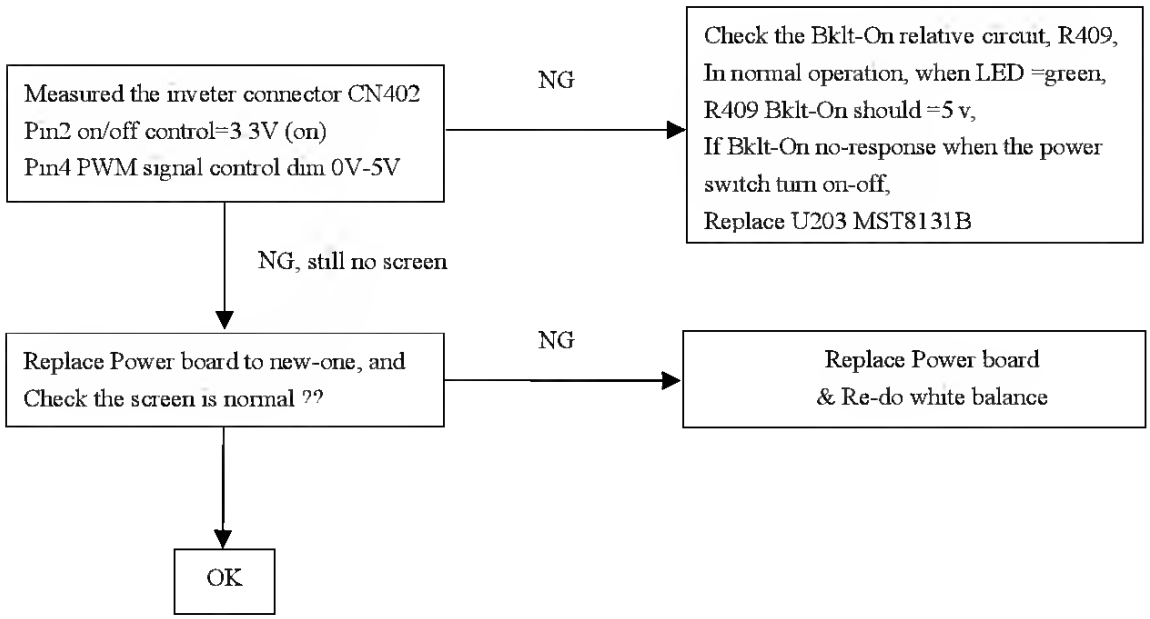
2.Panel-Power Circuit


Check R302 should have response
from 0V to 5V
When we switch the power switch
from on to off
NG
Check the PPWR panel power relative circuit,
Q301, Q302(pin 5,6,7,8)
In normal operation, when LED =green, R302
should =0 v,
If PPWR no-response when the power switch
Turn on and turn off, replace the U203-MST8131B
OK,R308 have response
Measured the Q302 pin 5,6,7,8= 5 V?
NG, no Voltage
Check U202 pin 1,2,3,4= 5V
Yes
OK
Replace Q302 (Nmos, SI9933)
OK

3.Inverter Control Relative Circuit


Measured the inveter connector CN402
Pin2 on/off control=3 3V (on)
Pin4 PWM signal control dim 0V-5V
NG
Check the Bklt-On relative circuit, R409,
In normal operation, when LED =green,
R409 Bklt-On should =5 v,
If Bklt-On no-response when the power
switch turn on-off,
Replace U203 MST8131B
NG, still no screen
Replace Power board to new-one, and
Check the screen is normal ??
NG
Replace Power board
& Re-do white balance
OK

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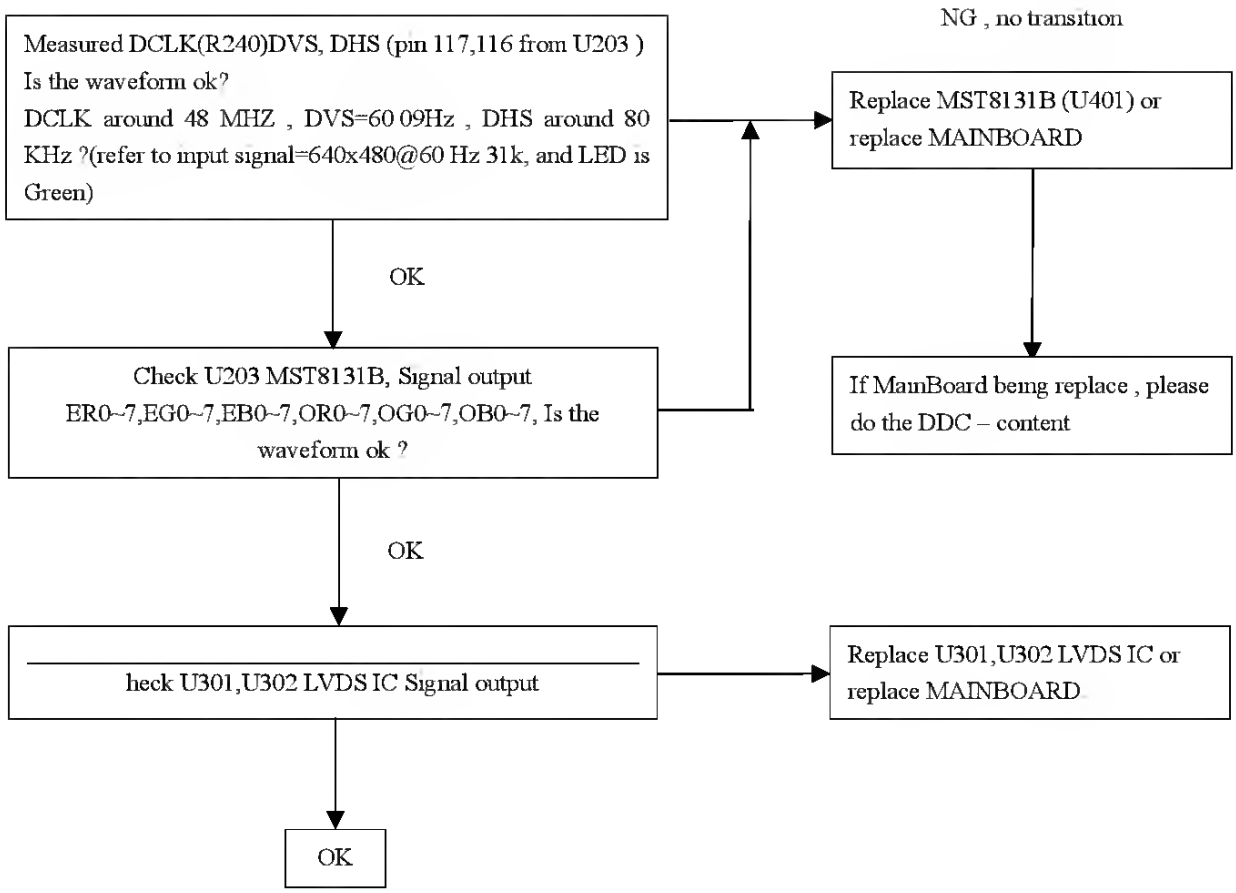
4.U602-Data Output


Measured DCLK(R240)DVS, DHS (pin 117,116 from U203) Is the waveform ok?
DCLK around 48 MHZ , DVS=60 09Hz , DHS around 80 KHz ?(refer to input signal=640x480@60 Hz 31k, and LED is Green)
NG , no transition
Replace MST8131B (U401) or replace MAINBOARD
OK
Check U203 MST8131B, Signal output ER0~7,EG0~7,EB0~7,OR0~7,OG0~7,OB0~7, Is the waveform ok ?
If MainBoard being replace , please do the DDC – content
OK
heck U301,U302 LVDS IC Signal output
Replace U301,U302 LVDS IC or replace MAINBOARD
OK

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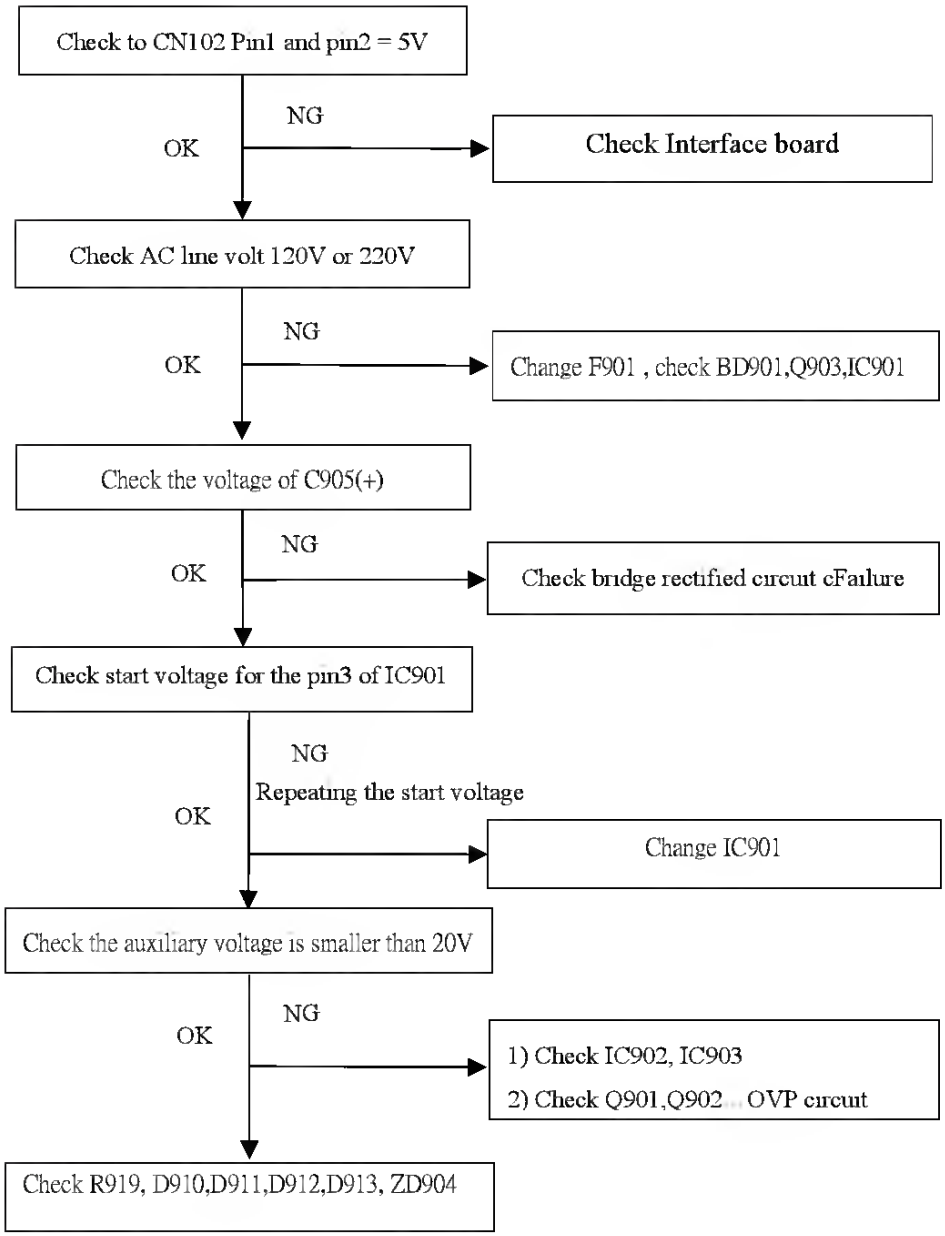
Power/Inverter Board

1.) No Power



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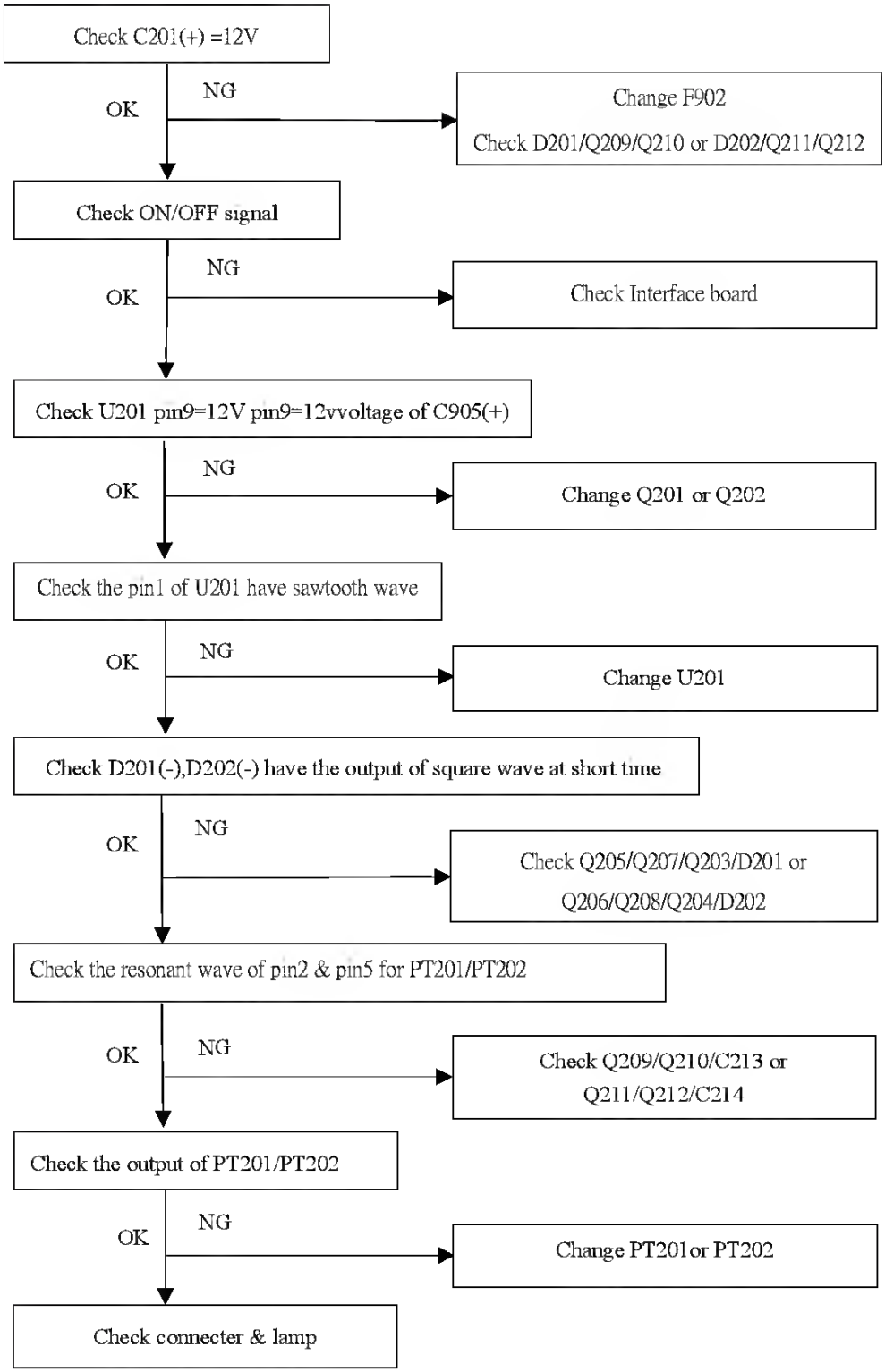
2.) W / LED , No Backlight



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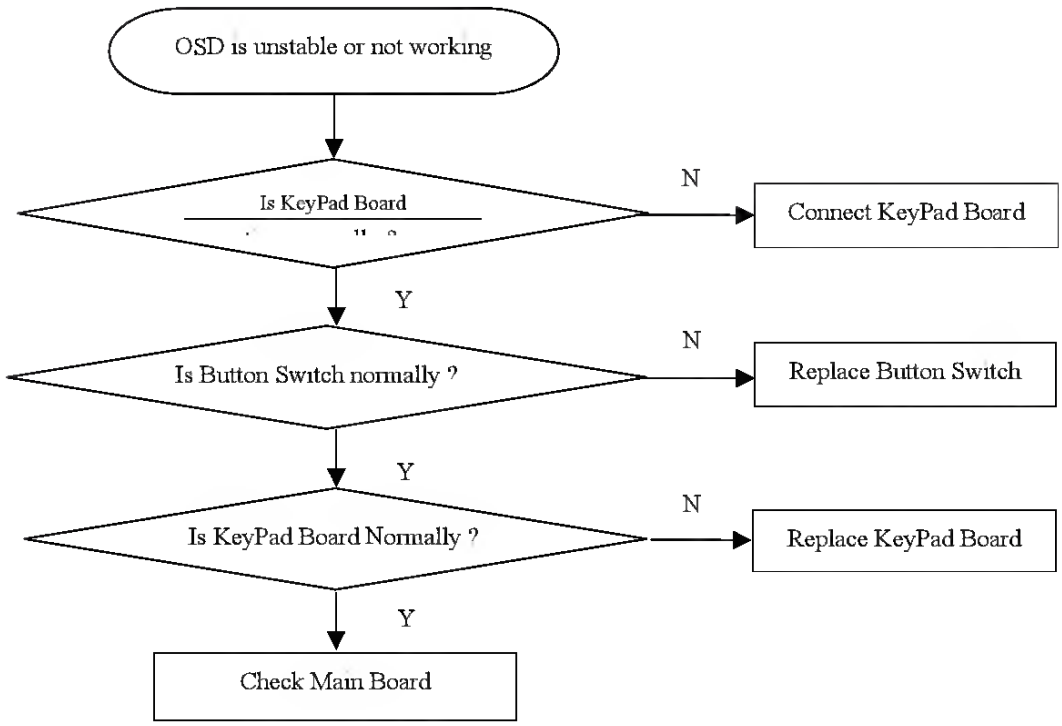
KeyPad Board



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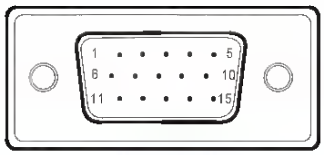
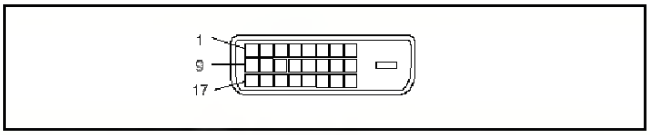
Connector Information

The following figure shows the connector locations on the monitor board:



15 - Pin Color Display Signal Cable(D-sub)

PIN NO.	DESCRIPTION	PI N NO.	DESCRIPTION
1.	Red	9.	NC
2.	Green	10.	Ground
3.	Blue	11.	Ground
4.	Ground	12.	DDC-Serial Data
5.	Ground	13.	H-Sync
6.	R-Ground	14.	V-Sync
7.	G-Ground	15.	DDC-Serial Clock
8.	B-Ground		



24 - Pin Color Display Signal Cable(DVI)

Pin	Meaning	Pin	Meaning
1.	TMDS Data2-	13.	not connected
2.	TMDS Data2+	14.	+5V Power
3.	TMDS Data 2/4 Shield	15.	Ground
4.	not connected	16.	Hot Plug Detect
5.	not connected	17.	TMDS Data0-
6.	DDC Clock	18.	TMDS Data0+
7.	DDC Data	19.	TMDS Data 0/5 Shield
8.	Analogue Vertical Sync	20.	not connected
9.	TMDS Data1-	21.	not connected
10.	TMDS Data1+	22.	DDC Clock Shield
11.	TMDS Data 1/3 Shield	23.	DDC Clock+
12.	not connected	24.	DDC Clock-

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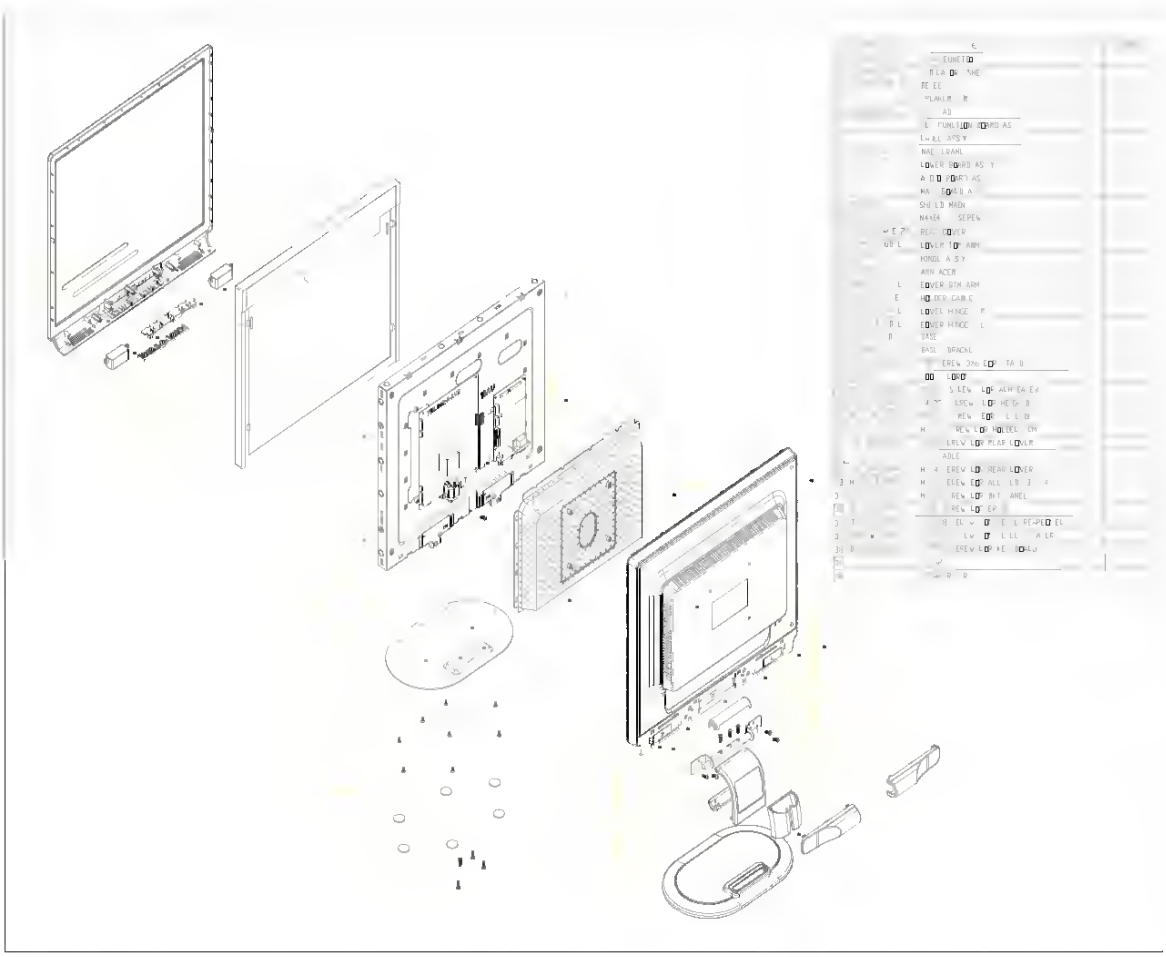
FRU (Field Replaceable Unit) List

This chapter gives you the FRU (Field Replaceable Unit) listing in global configurations of Acer Altos AL1921 .Refer to this chapter whenever ordering for parts to repair or for RMA (Return Merchandise Authorization).Please note that WHENORDERING FRU PARTS, you should check the most up-to-date information available on your regional web or channel. For whatever reasons a part number change is made, it will not be noted on the printed Service Guide. For ACER AUTHORIZED SERVICE PROVIDERS, your Acer office may have a DIFFERENT part number code from those given in the FRU list of this printed Service Guide. You MUST use the local FRU list provided by your regional Acer office to order FRU parts for repair and service of customer machines.

Note: To scrap or to return the defective parts, you should follow the local goverment ordinance or regulations on how to dispose it properly, or follow the rules set by your regional Acer office on how to return it.

Exploded Diagram



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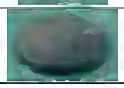
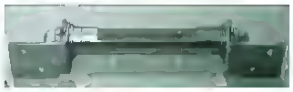
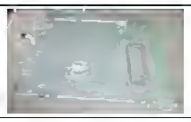
Note: Above picture show the description of the following component

Item	Picture	Description	Part No.
1		HOLDER CABLE	W33L4633-GD-X
2		ARM	20L003-1
3		SCREW	M1L 330 6120
4		SCREW	Q1L 130 6120
5		FOOT-PORON	12L 394 3
6		BASE	34L1337-GD-B
7		BASE PLATE	15L8022 -1
8		HINGE	37L-498 -1
9		SHIELD	85L-666-1
10		MAIN FRAME	15L8021-1
11		Key pad	33L4634-AI -L
12		REAR COVER	34L1336-AGD-2B

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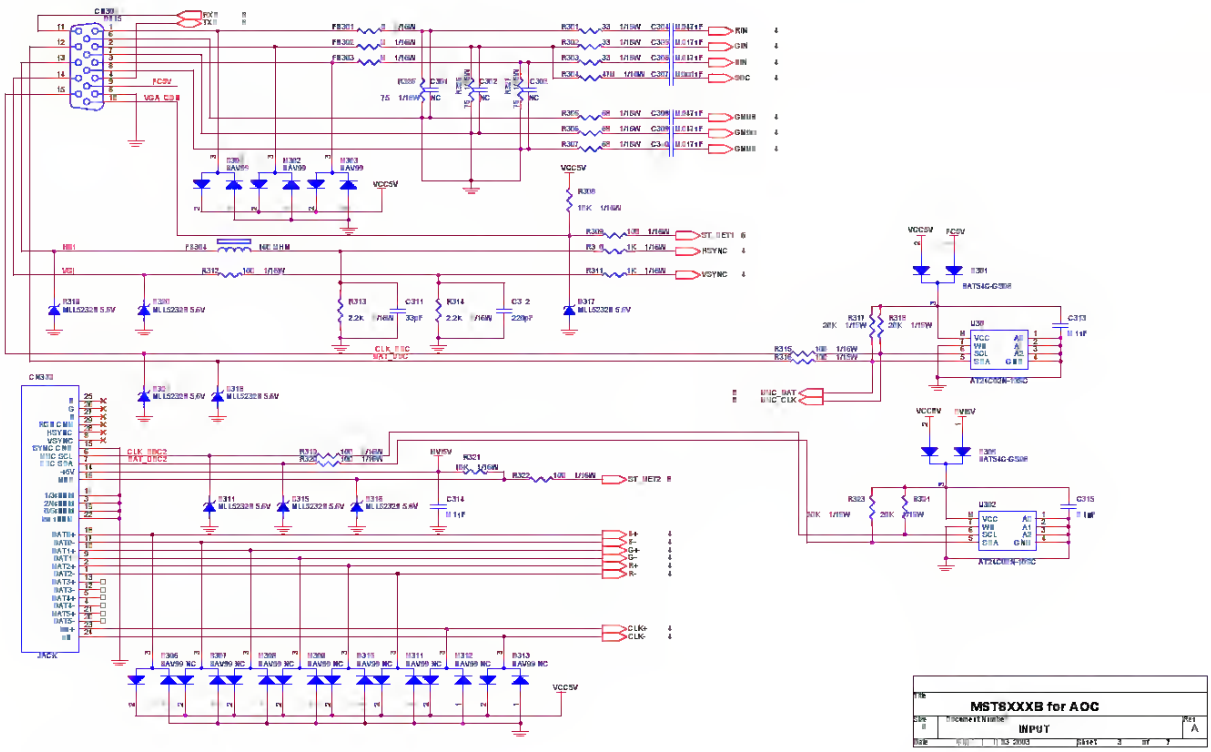
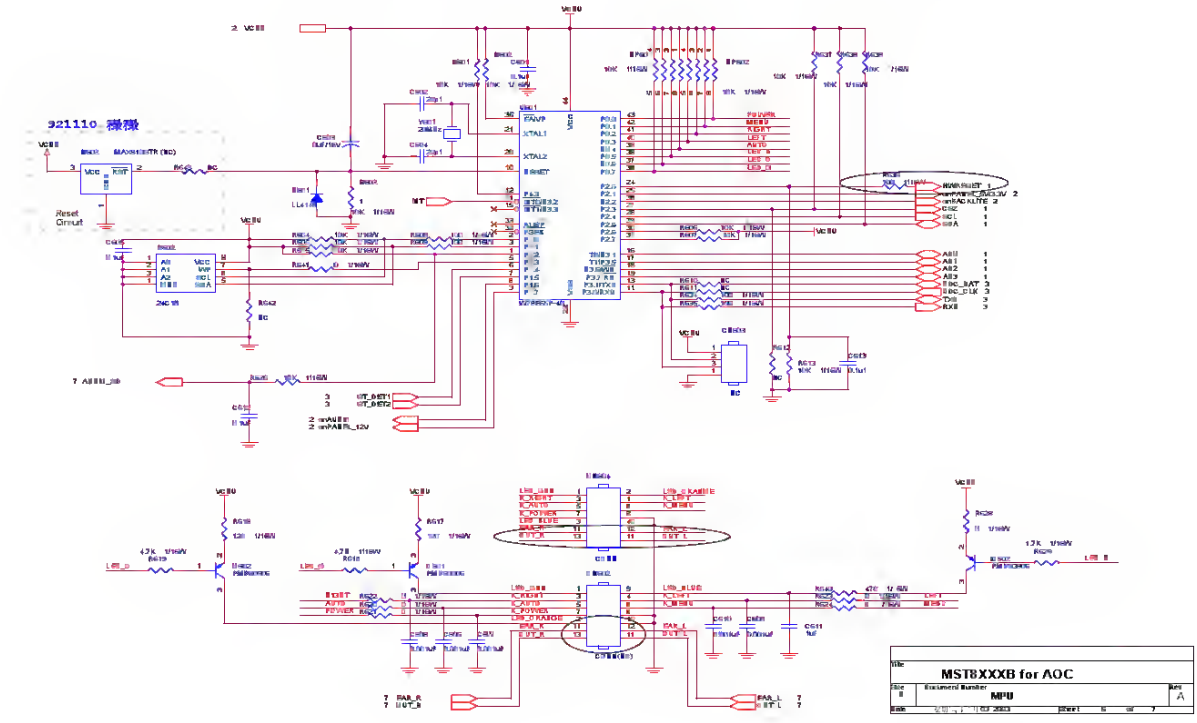
Schematic Diagram

Analog And Digital Input



MST8131B



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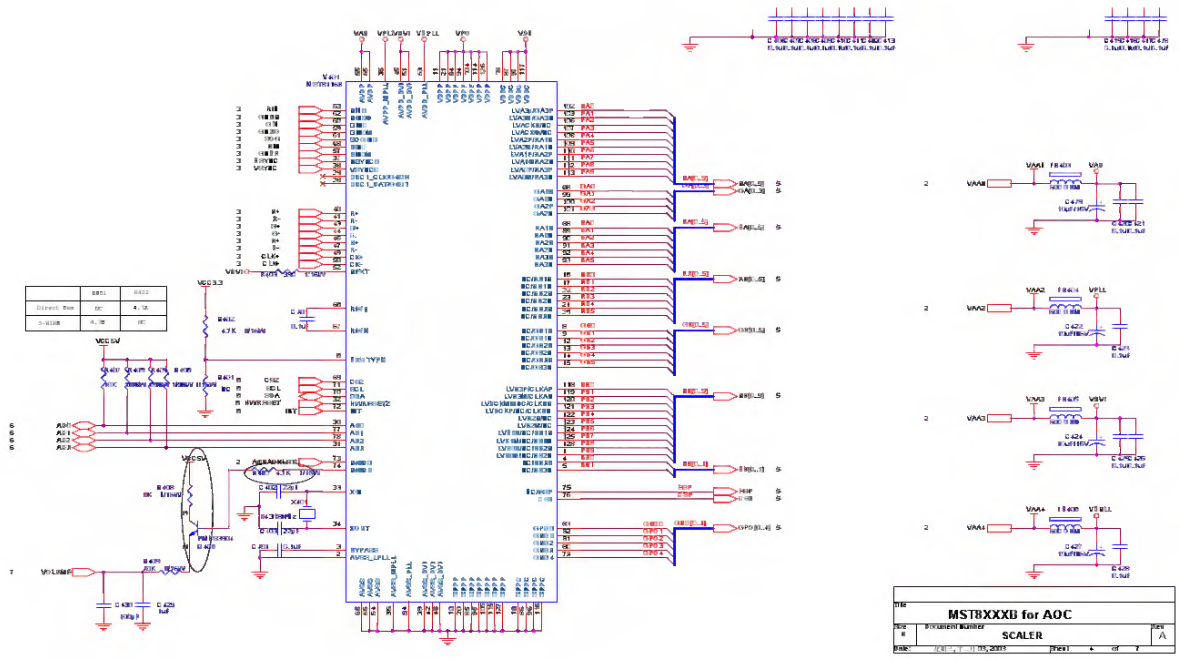
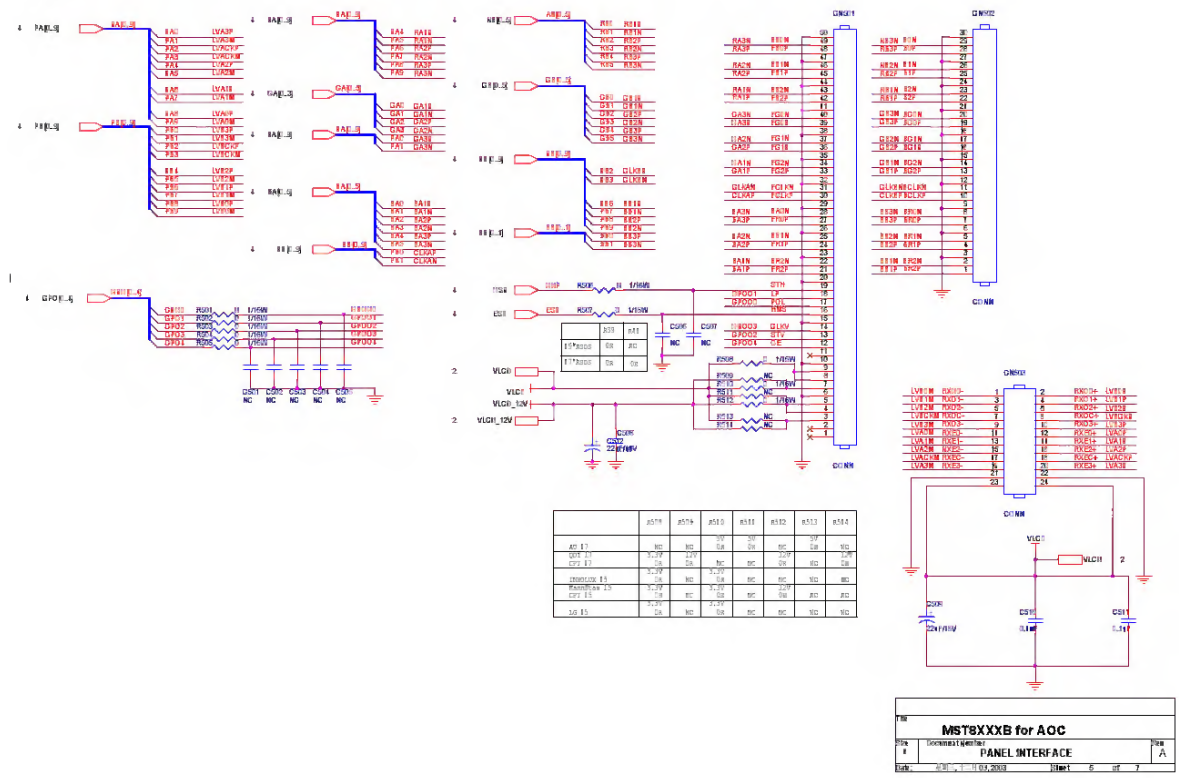


LVD-S



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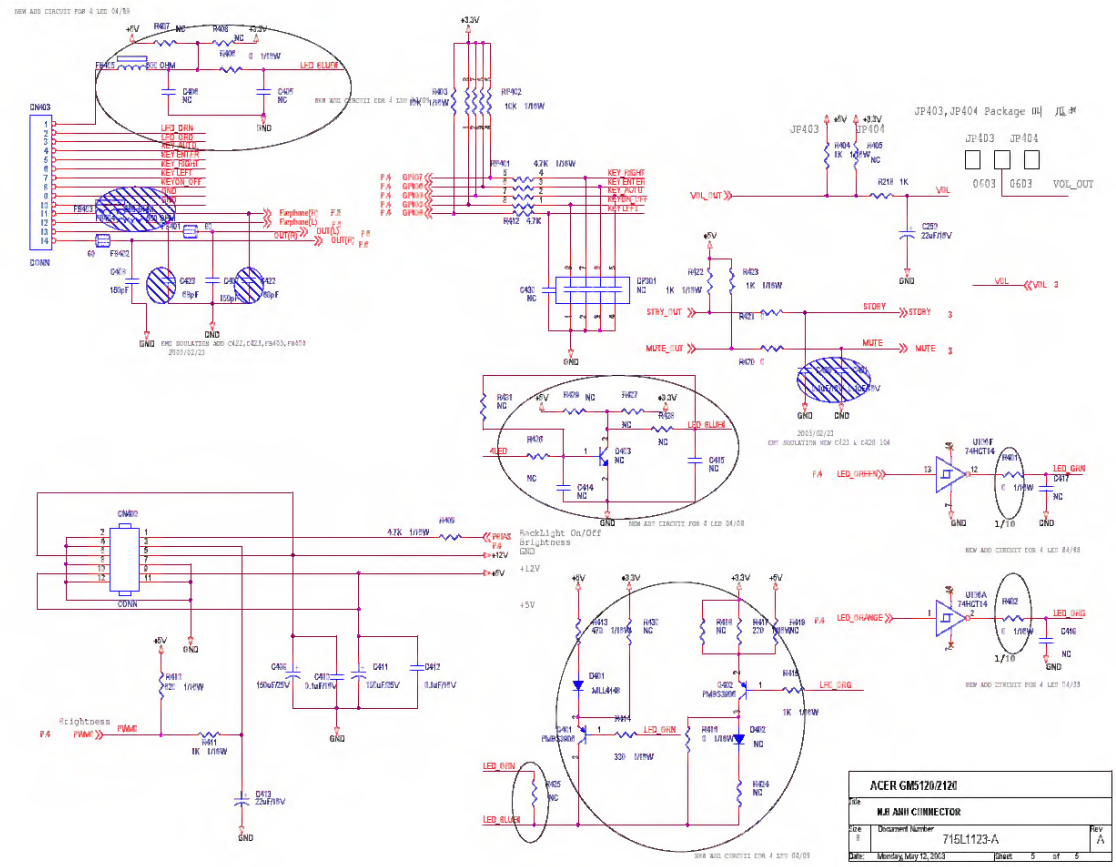
Key Board Connector



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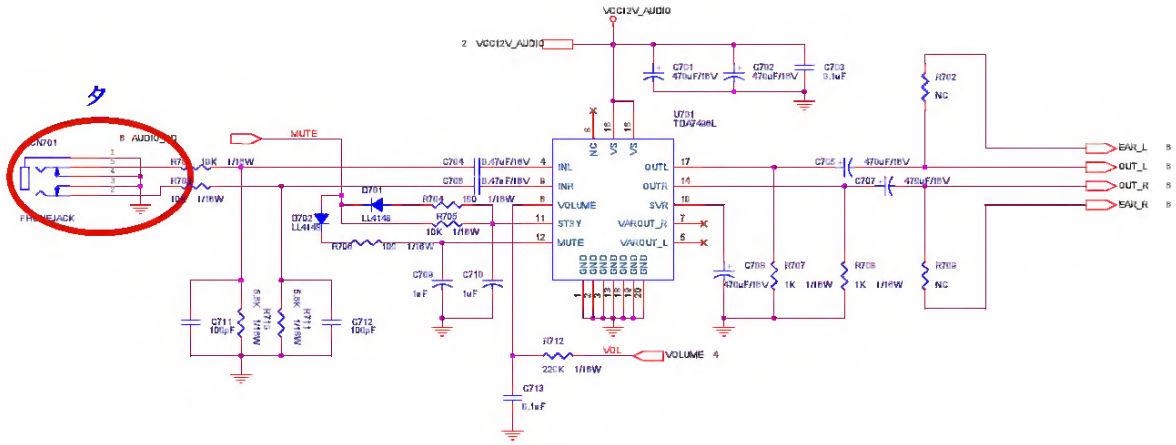
Audio



DC Power

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Online Support Information

This section describes online technical support services available to help you repair your Acer Systems.If you are a distributor, dealer, ASP or TPM, please refer your technical queries to your local Acer branch office. Acer Branch Offices and Regional Business Units may access our website. However some sources will require a user i.d. and password. These can be obtained directly from Acer CSD Taiwan.

Acer's Website offers you convenient and valuable support resources whenever you need them.In the Technical Information section you can download information on all of Acer's Notebook, Desktop.

Server models including:

- Service guides
- User's manuals
- Training materials
- Bios updates
- Spare parts lists
- TABs (Technical Announcement Bulletin)

For these purposes, we have included an Acrobat File to facilitate the problem-free downloading of technical material.

Also contained on this website are:

- Detailed information on Acer's International Traveler's Warranty (ITW)
- Returned material authorization procedures
- An overview of all the support services we offer, accompanied by a list of telephone, fax contacts for all your technical queries.

We are always looking for ways to optimize and improve our services, so if you have any suggestions comments, please do not hesitate to communicate these to us.

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